

Is Laplacian Determinism Compatible with Reasons-Based Freedom?

by

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Submitted in fulfilment of the
requirements for the Degree of

Master of Arts

University of Tasmania November, 2011

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Thesis Abstract

The topic of free will is perhaps the largest and richest debate in philosophy. With many notable philosophers having lent their hand to the discussion over the years, there is much that can be said of, and read into, this debate. It is, therefore, essential when engaging in any discussion of free will to make one's analysis well defined and sufficiently narrow in scope. For this reason, this thesis will tackle a specific question in relation to several of the main pillars of free will: compatibilism and determinism. Specifically, I will seek to answer whether Laplacian Determinism (a popular form of determinism) is compatible with reasons-based freedom (a generalised compatibilist freedom that bases free will on the ability to act for reasons). Is every thesis of compatibilist freewill consistent with every thesis of determinism? I will argue, that at least in this case, the answer to that question is no.

Acknowledgements

I would like to acknowledge the mentorship and assistance of both my supervisors: Dr Richard Corry and Dr David Coady. Both have given welcome and meticulous advice in the production of this thesis.

I would like to thank my family for all the support they have given me during this process.

I would like to highlight how useful online access to numerous philosophical journals through the University library homepage has been. Having quick, easy, and comprehensive access to high-quality journals has been incredibly useful.

Finally, and perhaps most importantly, I would like to thank my iPad. It made reading PDFs far easier. So thanks, iPad.

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Chapter One: Introduction

An Overview

It is the goal of this thesis to answer the following question: can reasons-based freedom be compatible with Laplacian Determinism? The exact concepts of determinism, compatibilism, and freedom that this question relies on, will be established briefly in this introduction (with proper analysis occurring later in the thesis). This introduction is intended to offer three things: a brief introduction to the debate and its common concepts and terms; an attempt to offer rationale for the importance of this debate and my specific question in particular; and an overview of the structure of this thesis.

Laplacian Determinism has been referred to as exerting a very strong influence on the practice of physics and other sciences as well as on philosophy up to the present day'.¹ Indeed, LD has been referred to by some authors to be the "ordinary doctrine of determinism".² Reasons-based freedom, or resting our freewill on our ability to act for reasons, is a very popular contemporary view of freedom, with authors such as Sie and Wouters noting, "according to a strong and influential current in philosophy, it is rather the ability to act for reasons that is crucial to our everyday practices of personal responsibility".³ Reasons-based freedom should be, on the face of it, compatible with Laplacian Determinism, but this thesis will argue that it is not. It will do this by arguing that Laplacian Determinism requires a type of causation – sufficient causation – that renders the possibility of reasons being causes incoherent. Once this conclusion has been reached, I will briefly also assess whether Laplacian Determinism is a coherent concept at all (though this will be a brief sidenote to the main goal of this thesis).

I will now go on to introduce briefly the integral concepts of this debate and to expand on their importance.

¹ Bishop, R. C. (2003). "On Separating Predictability and Determinism." *Erkenntnis* 58(2): 169-188. Pg 180

² Margenau, H. (1967). "Quantum Mechanics, Free Will, and Determinism." *The Journal of Philosophy* 64(21): 714-725. 718

³ Sie, M. and A. Wouters (2010). "The BCN Challenge to Compatibilist Free Will and Personal Responsibility." *Neuroethics* 3(2): 121-133.

Introduction

This thesis will focus on the philosophical concept of freewill. If recent experiments within psychology are anything to go by, then our belief that we either have or do not have freewill is of critical psychological importance. Recent studies have shown that when we are made to believe we lack freewill, this leads to apathetic and anti social behaviour,⁴ ranging from an increase in the likelihood that we will cheat and steal,⁵ to reduced feelings of guilt when we do commit some unvirtuous act.⁶ According to these experiments, believing we lack the ability to choose also reduces counterfactual thinking,⁷ undermining people's belief that they can control their desires.⁸ Such experimental evidence has led some psychologists to conclude that a society in which people do not believe in freewill "would be a rough and cruel place to live".⁹ If these psychology experiments are right, then the pre-theoretical concept of freewill is so intimately connected with our sense of self, that reducing a belief in freewill can have demonstrable and negative psychological effects. The difference between a society that believes in freewill and a society that is apathetic and anti-social, is surely a significant difference indeed. It is perhaps quite safe to conclude, therefore, that our concept of freewill is of critical psychological importance.

The behavioural changes resulting from a lack of belief in freewill, as described above, do not begin to scratch the surface of potential consequences this could pose. Many philosophers have noted how interconnected our concept of freedom is with other concepts we usually hold as critically important.¹⁰ From our moral responsibility, to our ability to form unique and creative thoughts, to our ability to have justifiable knowledge:¹¹ many concepts we take for granted seem to be threatened if we come to believe we do not have freewill. If freewill really is so connected to so many other concepts, then any revision or elimination of freewill would require a resulting change to these concepts.

⁴ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." *Neuroethics Online First*(25 February 2010).

⁵ Nahmias, E. (2009). "Why 'Willusionism' Leads to 'Bad Results': Comments on Baumeister, Crescioni, and Alquist." *Neuroethics Online*.

⁶ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." *Neuroethics Online First*(25 February 2010).

⁷ Holton, R. (2009). "Response to 'Free Will as Advanced Action Control for Human Social Life and Culture' by Roy F. Baumeister, A. William Crescioni and Jessica L. Alquist " *Neuroethics Online First*(27 July 2009).

⁸ *Ibid.*

⁹ *Ibid.*

¹⁰ Kane, R. (2002). Introduction: The Contours of the Contemporary Free Will Debate. *The Oxford Handbook of Free will*. R. Kane. New York, Oxford University Press: 406-440. Pg 4

¹¹ *Ibid.*

But its ability to affect our motivations and behaviour, and its connection with other critical concepts worth wanting, let alone our concept of self, does not sum up the consequences of our concept of freedom. The topic of freewill is tightly interwoven with many other disciplines,¹² with authors from political science,¹³ psychology,¹⁴ statistics,¹⁵ biology,¹⁶ and physics¹⁷ regularly doing research or writing articles in this area. How free we are is not just a topic for philosophy, a concept of that fundamental ability is integral to nearly every other field of study. For example, when it comes to the law, how free we can be (or if we are free at all) should affect how and on what grounds we are punished. The study and importance of freewill, therefore, is not restricted to philosophy. And if, as above, our personal concepts of freewill can have such important psychological implications, then the fact that freewill is important to so many other disciplines only magnifies this effect.

As has been so briefly shown above, freewill seems to be a critically important concept. How free we are, or if we are free at all, has important psychological, conceptual, and inter-disciplinary ramifications. From the fact of its importance it should follow that study of freewill is equally, if not more, important. While the worries and patterns sketched above rely, more or less, on a pre-theoretical view of freewill, it is through proper, rigorous study that we can hope to eliminate, or validate, these worries.

As this thesis is interested in the philosophical study of freewill, I will now briefly sketch out the traditional analysis common in the philosophical literature. Once this has been achieved, I will outline the intended argument for this thesis, before offering a brief defence as to why I believe my specific question is of importance.

But what is freewill, and how can we be sure if we have it? These questions, and more, have formed the linchpin of the freewill debate for centuries. According to some authors, the topic

¹² Fingarette, H. (2008). "Free Choice." *Current Psychology* **27**(1): 1-5. Pg 2

¹³ Duus-Otterström, G. (2008). "Betting Against Hard Determinism." *Res Publica* **14**(3): 219-235.

¹⁴ Sie, M. and A. Wouters (2010). "The BCN Challenge to Compatibilist Free Will and Personal Responsibility." *Neuroethics* **3**(2): 121-133.

¹⁵ Seneta, E. (2003). "Statistical Regularity and Free Will: L.A.J. Quetelet and P.A. Nekrasov." *International Statistical Review* **71**(2): 319-334.

¹⁶ Libet, B. (2002). Do We Have Free Will. *The Oxford Handbook of Free will*. R. Kane. New York, Oxford University Press: 551-564

¹⁷ Wilson, M. (2009). "Determinism and the Mystery of the Missing Physics." *Brit. J. Phil. Sci* **60**: 173-193.

of freewill is the most written about topic in the philosophical literature.¹⁸ As such, there is a wealth of different perspectives, different arguments, and different theories. There are, however, several concepts central to this topic: determinism, indeterminism, compatibilism, and incompatibilism. I will now briefly discuss these.

Determinism and indeterminism are theories about reality. Both come in many different variations, but I intend here only to give a very brief introduction to these concepts, as they will be discussed in more depth in Chapter Four. Briefly then, determinism is usually a theory about there being only one possible future from one set past: "...if determinism is true, though, then at every instant, there is exactly one physically possible future; the future, in any deterministic world, is a branchless extension of the past" Haji;¹⁹ "The past, the present or the timeless (or some combination of these) has narrowed down the number of possible futures to one", Harding.²⁰ So in essence, determinism is a thesis of *determination*. The past, whatever it is, determines the future in such a way that once the past is set the future is set also. One specific past cannot lead to two possible futures.

Indeterminism is essentially the negation of the thesis of determinism.²¹ If, as defined above, determinism requires one specific future from one specific past, then under indeterminism one specific future can lead to two or more possible futures. Basically, the past does not directly determine the future in a one-to-one way.

The two other concepts central to understanding the traditional freewill debate are compatibilism and libertarianism. Indeed, according to Kane, it is upon these concepts, and especially compatibilism, that much of the contemporary analysis of freewill rests.²² Both are statements about the relation of freewill to determinism/indeterminism. Briefly, compatibilism is the thesis that freewill, or at least any freewill worth wanting, is *compatible* with determinism. You can have significant freewill in a deterministic universe – there is nothing about the character of determinism that rules out the kind of freewill we find important (that

¹⁸ Kane, R. (2002). Introduction: The Contours of the Contemporary Free Will Debate. The Oxford Handbook of Free will. R. Kane. New York, Oxford University Press: 406-440. Pg 3

¹⁹ Haji, I. (2009). "Freedom and Practical Reason." Ethical Theory and Moral Practice 12(2): 169-179. Pg 169

²⁰ Harding, G. (1997). "Free Will and Determinism: Why Compatibilism is False." Erkenntnis 47(3): 311-349. Pg 227

²¹ Ekstrom, L. (2003). "Free Will, Chance and Mystery." Philosophical Studies 113(2): 153-180. Pg 155

²² Kane, R. (2002). Introduction: The Contours of the Contemporary Free Will Debate. The Oxford Handbook of Free will. R. Kane. New York, Oxford University Press: 406-440. Pg 6

is, the kind of freewill that was addressed above). As van Inwagen puts it, “Compatibilism is the thesis that determinism and the free-will thesis could both be true”.²³ Incompatibilism is the antithesis of this thesis: incompatibilism states that freewill, or the freewill we really want, is in fact impossible in a deterministic universe. Libertarianism is the thesis that freewill is only possible within an indeterministic universe.²⁴ That is, freewill, or the kind of freewill we want, can only operate in a universe where the past does not wholly determine the future, with some kind of indeterminacy ensuring more than one future is possible at any time. To sum up, compatibilism is the view that freedom is consistent with determinism, and libertarianism is a type of freedom only possible in an indeterministic universe.

As a brief side note, in this thesis I will be using the term 'compatibilist freedom'. My intention is for this to denote a freedom that is consistent with determinism. That is, such a freedom, on the face of it, could operate in a deterministic universe.

Traditionally, the concepts of control and alternative possibilities (AP) have been central to the debate over compatibilism and libertarianism. Compatibilists (or certain compatibilists) have argued that control – a concept consistent with determinism – is all that is required to ensure freedom;²⁵ while libertarians (or certain libertarians) have argued that we require genuine possible alternatives for choice in order to truly be considered free.²⁶ I will deal with these concepts more closely in Chapter Two.

The very short definitions given above are, I hope, enough of an introduction to the general freewill debate to make the topic of this thesis more intelligible. I intend to argue for the following claim: reasons-based freedom (a type of compatibilist freedom that requires that we be able to act for, and explain our actions through, reasons) is incompatible with Laplacian Determinism (a theory of determinism that roughly states that every event within the universe is the result of antecedent conditions, and through a knowledge of the laws of nature and these conditions you can predict every event with certainty). Reasons-based freedom is a type of compatibilist freedom, so it should, by definition, be ‘compatible’ with Laplacian

²³ van Inwagen, P. (2008). "How to Think about the Problem of Free Will." *The Journal of Ethics* 12(3-4): 327-341. Pg 330

²⁴ *Ibid.*

²⁵ Smilansky, S. (2003). "Free Will and the Mystery of Modesty." *American Philosophical Quarterly* 40(2): 105-117. Pg 115

²⁶ Bourke, J. (1983). "Responsibility, Freedom and Determinism." *Philosophy* 13(51): 276-287. Pg 280

Determinism which is a type of determinism. This thesis, however, will argue that these two theories are inconsistent.

Before I conclude this chapter with a brief summary of the structure of this thesis, I must first defend the rationale for my question. While the study of freewill is demonstrably important, what about my analysis in particular? To recap, this thesis will argue that reasons-based freedom is not compatible with Laplacian Determinism. To begin with, as I shall argue later on in this thesis, reasons-based freedom is a very popular form of compatibilist freedom,²⁷ and Laplacian Determinism is a very popular view of determinism.²⁸ If these theories are popular, and yet they are inconsistent, it seems all the more important to draw attention to their incompatibility, as it seems more likely that people may erroneously hold both views at once. Indeed, if I am successful in showing that these two theories are incompatible, then it raises the question of which, if either, we should accept (an argument briefly dealt with in Chapter Seven of this thesis). Either LD or reasons-based freedom offers committed determinists a better picture of reality – and determinists must be forced to pick between these two, or come up with different theories altogether.

Structure of this thesis

This thesis will be split up into eight chapters (including this introduction and a brief conclusion). Chapters Two-Seven will be devoted to establishing my argument. In order to establish the argument of this thesis, I have to show the following:

- 1) That freedom is indeed something that we want. Specifically, we want it because it confers responsibility. As such, the consequences of not having freedom are high..
- 2) Reasons-based freedom is a type of compatibilist freewill. As such it is, conceptually, a type of freewill that can confer responsibility in a deterministic universe..
- 3) Reasons-based freedom requires, in order to safeguard responsibility, that our reasons be allowed to explain our actions.

²⁷ Sie, M. and A. Wouters (2010). "The BCN Challenge to Compatibilist Free Will and Personal Responsibility." *Neuroethics* 3(2): 121-133. Pg 121

²⁸ Bishop, R. C. (2003). "On Separating Predictability and Determinism." *Erkenntnis* 58(2): 169-188. Pg 180

- 4) Because of the way LD is formulated, it requires of its explanations that they cite sufficient causes and the laws of nature.
- 5) Reasons cannot be sufficient causes, and there cannot be any exceptionless laws of nature at the level of reasons, therefore, reasons cannot figure in LD explanations.
- 6) LD is not compatible with reasons-based freedom, as it cannot allow reasons to account for behaviour.
- 7) LD is unlikely to be compatible with any responsibility-conferring freedom as it commits us to reductionism; it also requires us to believe in perfect predictability, which is an incoherent notion.
- 8) Therefore, LD is not compatible with reasons-based freedom, and we have grounds to reject LD.

Along the line of the argument shown above, the chapters of this thesis will be split up into the following: Chapter Two will deal with freedom; Chapter Three will look at reasons-based freedom; Chapter Four will define and analyse Laplacian Determinism; Chapter Five will look at explanations; Chapter Six will bring together the arguments of chapters Two through Five, arguing that LD and reasons-based freedom are incompatible; and Chapter Seven will argue that we have grounds to reject LD as an incoherent theory, giving preference to reasons-based freedom instead. I will then end with a brief summary of analysis in the concluding chapter of this thesis.

Chapter Two: Morality – Why?

The structure of this chapter

This chapter will be split up into two main sections. In the first half of this chapter I will argue that the kind of freedom that we want is one that ensures our moral responsibility. The link between freedom and responsibility is an historically strong one, with many philosophers viewing freedom as a necessary, if not sufficient, condition of responsibility.²⁹ To establish this, I will then argue that responsibility is indeed something that we want, by showing that responsibility enables us to justify our reactive attitudes and link our behaviour to our deserts (and that these are valuable because they justify attitudes such as gratitude and forgiveness, and enable us to eschew moral luck).

In the second half of this chapter, I will assess whether freedom is a necessary condition of responsibility. That is, regardless of whether you must be responsible if you are free (as freedom is a sufficient condition of responsibility), do you have to be free to be responsible (is freedom a sufficient and necessary condition of responsibility)? In answering these questions I will first establish that defining and assessing 'freedom' is a very hard thing, as among other things, Libertarians and Compatibilists have dialectically opposed views about what freedom requires. But I will try and pick two very common necessary conditions of freedom – one for compatibilists and one for libertarians – that are very popular conditions. The two conditions I will choose are the requirement of control and the requirement of alternative possibilities for choice. Many compatibilist definitions base freedom in the ability of the individual to control their behaviour,³⁰ while many libertarians require the presence of alternative possibilities to label an agent free.³¹ Using these conditions, I will assess whether both could be necessary conditions of responsibility – I will do this by seeing whether they can a) successfully link an act to the person, and not the circumstances, and b) help distinguish between the circumstances that mitigate responsibility: coerced acts, unintentional

²⁹ Clarke, R. (1992). "Free Will and the Conditions of Moral Responsibility." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **66**(1): 53-72. Pg 53

³⁰ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." Neuroethics Online First(25 February 2010).

³¹ Steward, H. (2008). "Moral Responsibility and the Irrelevance of Physics: Fischer's Semi-compatibilism vs. Anti-fundamentalism." The Journal of Ethics **12**(2): 129-145. Pg 140

acts, and intentional acts. I will conclude that both of these conditions can confer responsibility independently, enabling either a compatibilist or libertarian view based upon them to link freedom and responsibility in a robust way.

Once I have assessed both control and alternative possibilities (AP) in this way, I will ask whether they can both be a necessary condition of freedom, and thus, responsibility conferring freedom. Noting that AP requires control as well, I will conclude that control is necessary to both libertarian and compatibilist freedom. I will then ask whether AP is necessary, or whether there are any arguments against AP being a requirement of freedom. I will then look at Frankfurt arguments – the common compatibilist argument against the requirement of AP for responsibility – and conclude that compatibilists have some reason to believe AP is not a necessary condition of freedom.

I will close this chapter with the conclusion that freedom is desirable because freedom confers responsibility. More specifically, compatibilist freedom can confer this responsibility through basing freedom in the ability of a person to control their behaviour. This will set up Chapter Three, where I look at a type of compatibilist freedom that is based on control – reasons-based freedom.

What is freedom and why do we want it?

What is Freedom?

What is freedom? Freedom is many things, and unfortunately, it has many different definitions. Freedom can be the ability to act without coercion.³² It can be defined as the ability to be the “ultimate source” of our purposes.³³ It can be an open action, one where we can do any of a number of things up until the point we decide only on one.³⁴ It can be simply, as Jennings puts it, the ability to hold “within one's self the determinants of action”.³⁵

The problem with defining freedom is the problem of the entire freewill debate. How we choose to define freedom dictates whether it is compatible or incompatible with determinism or indeterminism. If we require the presence of alternative possibilities for freedom, for

³² Gert, B. and T. Duggan (1979). "Free Will as the Ability to Will." *Noûs* **13**(2): 197-217. Pg 198

³³ Kane, R. (1989). "Two Kinds of Incompatibilism." *Philosophy and Phenomenological Research* **50**(2): 219-254. Pg 315

³⁴ Ginet, C. (1997). "Freedom, Responsibility, and Agency." *The Journal of Ethics* **1**(1): 85-98. Pg 85

³⁵ Jennings, H. S. (1919). "Experimental Determinism and Human Conduct." *The Journal of Philosophy and Scientific Methods* **16**(7): 180-183. Pg 182

instance, then freedom cannot be compatible with determinism. But if freedom requires only the hypothetical ability to choose between alternatives (as opposed to the categorical ability)³⁶ then it can be compatible with determinism. So it becomes very hard, almost impossible, to give an 'objective' definition of freedom without begging the question against the libertarian or the compatibilist.

Rather than trying to give a robust definition of freedom that might satisfy both a libertarian and compatibilist, it seems fruitful to ask instead what features of freedom make it worth wanting in the first place. As was briefly discussed in Chapter One, our pre-theoretical concept of freedom is very important, and can have considerable psychological, conceptual, and sociological consequences. But how do we properly understand this folk-psychological concept? Perhaps the best way to do this is to split freedom up into the conditions we believe it might confer. Are there any attributes of freedom we want more than others? Are there any conditions that are germane to both compatibilist and libertarian theories?

In looking for a point of commonality between definitions of freedom, it seems prudent to ask first why it is that we want to be free. Is it so we can be “writing a sentence in the narrative of our lives”, as Fischer puts it?³⁷ Or perhaps, so we can be active in our deliberations and choices? So we are capable of genuine creativity?³⁸ So we can deserve our rewards and punishments?³⁹ So we can have dignity as human beings?⁴⁰ So we can be responsible for our actions in a genuine and robust way?⁴¹

Of all the possible conditions I just stated, the most important seems to be responsibility. Why? Because the concepts of dignity, just desserts, and self-'authorship, all fall under responsibility. Responsibility is the direct link to morality, and morality, as Fischer puts it, is the “gateway” to reward, punishment, and all those other valuable concepts associated with freedom.⁴² Responsibility seems to be that which connects us to our actions in a meaningful

³⁶ Campbell, C. A. (1962). "Moral Libertarianism: A Reply to Mr. Franklin." The Philosophical Quarterly 12(49): 337-347. Pg 339

³⁷ Fischer, J. M. (2006). "The Free Will Revolution (Continued)." The Journal of Ethics 10(3): 315-345. Pg 315

³⁸ Ekstrom, L. W. (2002). Libertarianism and Frankfurt-Style Cases. The Oxford Handbook of Free will. R. Kane. New York, Oxford University Press: 406-440. Pg 309

³⁹ Kane, R. (2002). Introduction: The Contours of the Contemporary Free Will Debate. The Oxford Handbook of Free will. R. Kane. New York, Oxford University Press: 406-440. Pg 4

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

⁴² Fischer, J. M. (2004). "Responsibility and Manipulation." The Journal of Ethics 8(2): 145-177. Pg 157

way. If we aren't responsible for our actions, then those actions seem to be random, chaotic, and of no real connection to us (what we do, and what deserts we get, then becomes a matter of luck).⁴³ Indeed, this connection between responsibility and freedom is so strong that some authors, such as Xenakis, equate the two concepts, stating simply: "Freedom means responsibility".⁴⁴

Now we have established this link between responsibility and freedom, it is time to explore it. Is responsibility really something we want? And if we want freewill because we supposedly want responsibility, are we really sure that freewill is the *only* way we can have responsibility? Or is freewill not even a necessary condition of responsibility to begin with?

Below I will argue that we need freewill for responsibility, and that responsibility certainly is something to desire.

What is Responsibility?

"This is the story of heaven and hell. As I understand it, true moral responsibility is responsibility of such a kind that, if we have it, then it makes sense, at least, to suppose that it could be just to punish some of us with (eternal) torment in hell and reward others with (eternal) bliss in heaven." Strawson⁴⁵

What is Strawson discussing here? What is responsibility such that with it we can be justifiably rewarded or punished, and without it we deserve neither?

I chose the quote above to introduce this topic because it eloquently links responsibility to two core notions that are vital to understanding what it is and why we want it: justification, and the duality of reward and punishment. Justified reward and punishment seem to be at the heart of responsibility. If we can be said, or found, to be responsible for some act, then the desert we receive is justified. If, on the other hand, we are not responsible, or simply cannot ever be responsible for our actions, then it is never justified to reward and punish us – or so the literature says, with authors such as Smilansky noting, "no one deserves to suffer unless she is responsible".⁴⁶

⁴³ Kane, R. (2002). Some Neglected Pathways in the Free Will Debate. The Oxford Handbook of Free will. R. Kane. New York, Oxford University Press: 406-440. Pg 422

⁴⁴ Xenakis, J. (1957). "Free Will, A "Negative" Concept." The Journal of Philosophy **54**(3): 70-73. Pg 71

⁴⁵ Strawson, G. (1994). "The Impossibility of Moral Responsibility." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **75**(1/2): 5-24. Pg 9

⁴⁶ Smilansky, S. (1996). "Responsibility and Desert: Defending the Connection." Mind **105**(417): 157-163. Pg 160

The questions we must ask from this are what are the conditions of moral responsibility, what are the benefits, and can we have the benefits without having moral responsibility?

Conditions of Responsibility

Freewill

The first condition of moral responsibility I will assess is freewill. I do this because many authors link these two concepts together so strongly that each becomes a sufficient condition of the other, or the two concepts simply meld into the one.

Clarke states that most philosophers view free will as being a sufficient condition for responsibility.⁴⁷ In other words, when we are free, or we commit some action freely, that is *necessarily* something we are responsible for. But this relationship doesn't just end there, with some philosophers going further and merging the concepts into one. To repeat Xenakis again – "Freedom means responsibility".⁴⁸ That is, it is not simply the case that when you are free you are responsible – freedom and responsibility denote the same thing. Responsibility is freedom, and freedom is responsibility.

Not every philosopher shares the notion that freedom and responsibility are equivalent, but it is very much worth noting that in defining responsibility, for instance, some reference is usually made to freewill, and vice versa. And if you cannot define responsibility without referring to freewill, which refers to responsibility – then you seem to be engaged in circular reasoning. If we are responsible for those acts we are free for, and we are free for those acts we are responsible for – how are we to sort through such definitions?

One way to further this discussion, and a very important question for setting up the rest of my argument, is to ask whether we can ever be responsible without being free. That is, regardless of whether freedom is a sufficient condition of responsibility, is it a necessary condition? Setting aside Xenakis' notion that these two concepts are one, we must ask whether you can have responsibility without being free. Unfortunately, this is not an easy question to answer because to do so we must look at the conditions of freedom and responsibility and compare them. But, as above, it is very hard to define freedom without begging the question. For instance, if freedom really does require AP – but Frankfurt style arguments are correct, and

⁴⁷ Clarke, R. (1992). "Free Will and the Conditions of Moral Responsibility." *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 66(1): 53-72. Pg 53

⁴⁸ Xenakis, J. (1957). "Free Will, A "Negative" Concept." *The Journal of Philosophy* 54(3): 70-73. Pg 71

we can have responsibility without AP⁴⁹ – then we can have responsibility without freedom. But that only works if the concept 'freedom' requires AP. This simply becomes a game of language because, as many authors have noted, freedom is an open concept – a kind of placeholder for different conditions, rather than a term that denotes something concrete.⁵⁰ If you are convinced by Frankfurt's arguments, and you realise that responsibility doesn't require AP, then this does not mean you give up on us having freedom (or on responsibility requiring freedom), you simply change the definition of freedom to one that does not require AP. This openness and flexibility of definitions is an incredibly important notion to understand in this debate. As Vargas has pointed out, definitions shift over time, and the concept covered by the word 'water', for instance, is now far more complex and sophisticated than that of 200 years ago.⁵¹ Likewise with our concept of freedom. We are not likely to give up the word – it is very ingrained within our culture. Far more likely is that, as we become more sophisticated, our concept of freedom will change. Therefore, it seems impossible to ascertain whether responsibility requires freedom simply by looking at the definitions themselves.

This problem with language and definitions is an important one to note, and is key to understanding this debate as a whole. Perhaps Colwell is right, and circular reasoning, more than any other fact, is what has ~~kept~~ "kept alive" the freewill debate for centuries.⁵² If we cannot define freedom/freewill without begging the question and we can't define responsibility without some reference to freedom, then how are we to genuinely assess these concepts? I agree with Colwell, and think that it is this lack of clarity when it comes to freedom and responsibility that is the main source of consternation between compatibilists and libertarians, and that this is very much linked to a difference in what we allow to count as evidence.⁵³

Returning to my original point, I find it very hard to answer the question of whether we can have responsibility without freedom. As we cannot come to an agreed definition of this concept, it seems impossible to ask whether freedom truly is, or is not, a necessary condition of responsibility. As was suggested above, perhaps a better way to further this analysis might

⁴⁹ Frankfurt, H. (1969). "Alternative Possibilities and Moral Responsibility." Journal of Philosophy **66**: 829-839.

⁵⁰ Vargas, M. (2009). "Revisionism about free will: a statement & defense." Philosophical Studies **144**(1): 45-62. Pg 58

⁵¹ ⁵⁶ *Ibid.*

⁵² Colwell, G. (1994). "Freedom, determinism and circular reasoning " Argumentation **8**(3): 251-263.

⁵³ *Ibid.*

be to ask whether there are any attributes that freedom confers that we especially value. My answer to this would be yes, there is, and that attribute is responsibility. Regardless of what freedom is, or whether it is a necessary or sufficient condition for responsibility, its very connection to responsibility is of great importance. Maybe Xenakis is right, maybe much of the confusion around these terms stems from the fact they simply are the same thing. Or maybe he's wrong. It does not matter, however, for if we can at least agree that freedom, whatever it is, is important because of its connection to responsibility, then this is a start.

In the section below, I will take a look at responsibility. More specifically, I will assess the question of whether responsibility is important and whether it is necessary. For if, as I have suggested above, the type of freedom we want is a freedom that specifically confers responsibility – then I must prove in the below section that responsibility certainly is something that we want. I will do this by splitting responsibility up into its related concepts, such as praise and blame, and asking whether these concepts are important, or whether there are other concepts that confer the same benefit, but that do not require responsibility. That is, below I will try to assess whether moral responsibility truly is a concept we wish to vouchsafe, by specifically asking whether we can have the positive effects of responsibility without the necessity of the concept itself.

Why do we want responsibility?

The question of whether or not we require moral responsibility is a lively and passionate aspect of this debate. Smilansky refers to it as “perhaps the most serious conceptual, ethical, and personal-existential challenge of modernity”.⁵⁴ For much seems to be at stake, from the value of our own reasons,⁵⁵ to our concepts of originality.⁵⁶ If Fischer is right, and moral responsibility really is the gateway to reward and punishment,⁵⁷ and if we really do value those concepts, then what happens if that gateway closes? Is there an alternate route? The first question to ask is why do we want justified reward and punishment in the first place – what benefit does it bestow? The second question then becomes, can we have this benefit without responsibility? The answer to the first question is that justified reward and punishment are incredibly important for the structure and function of our society. The answer

⁵⁴ Smilansky, S. (2003). "Compatibilism: The Argument from Shallowness." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **115**(3): 257-282. Pg 271

⁵⁵ Haji, I. (2009). "Freedom and Practical Reason." Ethical Theory and Moral Practice **12**(2): 169-179. Pg 177

⁵⁶ Russell, P. (2008). "Free Will, Art and Morality." The Journal of Ethics **12**(3-4): 307-325. Pg 312

⁵⁷ Fischer, J. M. (2004). "Responsibility and Manipulation." The Journal of Ethics **8**(2): 145-177. Pg 157

to the second question is no. By looking at praise, blame, gratitude, evil, and our very own unique points of view – I will attempt to establish the constellation of related concepts we lose if we do not base our attributions of reward and punishment on responsibility.

Our society is set up along the lines of reward and punishment. It hardly seems to be a fact worth arguing for, but from our legal system, to our work lives, to the achievements we cherish and praise – reward and punishment seem to be the two pillars holding up social control. If I commit a crime, the law decrees that I am punished. If I spend my entire life finding a cure for cancer, or writing amazing symphonies, others may feel justified in praising me. If I come up with a fabulous invention and sell it, I gain monetary reward – whereas if I steal someone else's fabulous invention, I am punished. We reward good behaviour and punish bad behaviour – and this fact seems fundamental to how our society functions. The question is, can you justifiably reward and punish a person who is not responsible for their actions? The following arguments are intended to argue for the fact that you cannot justify reward and punishment without responsibility because you lose so much, from gratitude, to the ability to condemn evil. While it is true that you still may be able to find some justification for reward and punishment, without these associated concepts of blame/praise/gratitude/forgiveness/dignity, any system of reward and punishment would be totalitarian and essentially random. Those that are punished would not be punished because of some blameworthy action, but because punishing them serves some other purpose.⁵⁸ In other words, there would fail to be an objective connection between action and deserts.

Below is a selection of concepts that we would be set to lose if we did not have responsibility.

Praise and blame

Praise and blame are two concepts related to reward and punishment. They are related because they are the value ascriptions upon which reward and punishment can be placed. That is, when reward has a basis of moral responsibility it becomes a form of praise, likewise with blame. To say that someone is praiseworthy or blameworthy is to make a value judgement about their behaviour; to go on to reward or punish them is to use these ascriptions as justifications of our reactions. So, do reward and punishment really require praise and

⁵⁸ Eshleman, C. H. (1930). "Freedom and Determinism." *Journal of Philosophical Studies* 5(17): 151-152. Pg 152

blame? My answer is yes, they do. If you do not base reward and punishment on praise and blame, then there seems to be nothing wrong with rewarding someone who is blameworthy and punishing someone who is praiseworthy. And such a proposition seems deeply unfair to us. The very notion that somebody is punishable seems to come hand-in-hand with the fact they are blameworthy. If you punish someone for an act they were not blamed for, this disconnects the person's actions from their deserts, and leads to moral luck (a concept that is further analysed below). If you are punishing someone who is not blameworthy, are you not, in fact, merely attacking them? In this way, Smilansky notes that if we do choose to punish those that are not blameworthy, we make a victim out of them.⁵⁹ Praise and blame, therefore, do seem to be necessary for justifiable reward and punishment. But do we require responsibility for both of these concepts? Yes, for it is the responsibility that connects the agent to the action. It is being responsible for some praiseworthy act that makes the agent, and not the situation, praiseworthy, and thus deserving of reward.

But is losing this link between blame/punishment and praise/reward such a bad thing, or can it confer some benefit? As Sher has remarked, doing so would go a ways to eliminating that "toxic anger that makes future harmony difficult to achieve" as it would completely undermine retribution.⁶⁰ Wishing to harm those that have harmed us can lead to a repetitive, destructive, negative cycle, and Sher is completely right in thinking that a desire for retribution obstructs harmony. But I would also add that the harmony achieved would not be worth the price paid. We would not have harmony out of our deepest efforts for tolerance, but from sheer indifference. Plus, for the sake of eliminating retribution, are we willing to give up praise? There seems to be something deeply unjust in the idea that we would not be praised for some action that was good, or, of far more concern, the possibility that we could be praised for our worst actions and punished for our most noble deeds.

If praise and blame truly are to be lost if we do not have justifiable moral responsibility, then gratitude and forgiveness would go with them. As Pereboom points out, both gratitude and forgiveness presuppose praiseworthiness and blameworthiness for their justification.⁶¹ We are thankful for what is praiseworthy, and we forgive what is blameworthy. These, once again, are value judgements. And without the ability to justifiably ascribe value, we lose them.

⁵⁹ Smilansky, S. (2001). "Free Will: From Nature to Illusion." Proceedings of the Aristotelian Society **101**(71-95). Pg 76

⁶⁰ As quoted in Hieronymi, P. (2007). "Sher's defense of blame." Philosophical Studies Online. Pg 26

⁶¹ Pereboom, D. (1995). "Determinism al Dente." Noûs **29**(1): 21-45. Pg 40

Pressing this further, it is not only these general ascriptions of moral value that we are set to lose, but our deepest reactive attitudes, too. For, if we have lost the link between responsibility, praise, and blame, then how are we to view extreme acts of evil, for example? Those that perpetrate great acts of harm could essentially not be blameworthy for their acts, as we would have lost the ability to blame.⁶² Likewise, are we then committed to viewing evil acts as no worse, or no different, than natural disasters, as some authors have suggested? Indeed, it appears to be, as Fischer puts it, cases of extreme evil are where ~~the~~ metaphysical rubber meets the moral and judicial road".⁶³ Are we willing to treat Hitler as being no more morally responsible, no more deserving of our deep reactive attitudes, than Hurricane Katrina? Beardsly has noted, ~~e~~quanimity in the face of moral iniquity is nothing but extreme moral callousness, particularly, it will be said, when the wrongdoer is oneself".⁶⁴

There is another aspect central to moral responsibility that we are set to lose if we choose to reward and punish without it – our dignity and respect. Taking value out of our reactive attitudes fundamentally changes our attitudes towards people and our concepts of what they are and how they should be treated. If reactions to our actions are not based on their moral worth, then what dignity do we afford those we punish and reward? Moral luck will dictate those that are punished, and that hardly seems to be an action that shows any respect to a person. According to Strawson, without freedom we are committed to viewing each other and ourselves with a certain ~~o~~bjectivity of attitude".⁶⁵ If we are punished for something we are not blameworthy for, something we are not responsible for, then what type of dignity does this afford us? If people are to be treated as human beings worthy of respect, then we must somehow distinguish them from machines that are tools for a purpose. Destroying a machine because it serves some random purpose is one thing, but destroying a human being for some equally random reason, is a terrible notion. But the only way we can recognise it as terrible, is by allowing value judgements to count. Without them humans have no dignity, and are exactly the same as machines – to be used and treated according to someone else's purpose. With value, with justifiable responsibility, we gain dignity, respect, and crucially, self-worth.

⁶² McKenna, M. S. (1998). "The Limits of Evil and the Role of Moral Address: A Defense of Strawsonian Compatibilism." The Journal of Ethics 2(2): 123-142. Pg 134

⁶³ Fischer, J. M. (2006). "The Free Will Revolution (Continued)." The Journal of Ethics 10(3): 315-345. Pg 345

⁶⁴ Beardsley, E. L. (1960). "Determinism and Moral Perspectives." Philosophy and Phenomenological Research 21(1): 1-20. Pg 17

⁶⁵ Pereboom, D. (1995). "Determinism al Dente." Noûs 29(1): 21-45. Pg 38

This discussion of moral responsibility has been short, but it cannot end without a final word on justification. While we realise that reward and punishment are integral to our society, hopefully the above argument has gone some way to showing that those concepts must be grounded in justified moral responsibility. Decoupling moral responsibility from reward/punishment leads to moral luck or the “omnipresence of luck” as Smilansky refers to it.⁶⁶ For without justification, without the sense that our behavioural appraisals could be right or wrong – but we believe we have good reason to view them as *right* – then our reactive attitudes are *arbitrary*. And if our appraisals are arbitrary, then our deserts are equally as arbitrary. As Smilansky quite eloquently puts it, if a person “suffers on account of whatever he is, he is a victim of injustice, simply by being”.⁶⁷ The way that we are is what we will be judged on – and as we are not responsible for what we are (as we cannot be responsible for anything) – then we cannot change whether we will be judged though our best efforts or our most evil aspirations. Strawson talks of it as being, on these grounds, just as justified to punish people for their actions, as it is to punish them for their hair colour and the shape of their faces.⁶⁸

Therefore, in answer to the question of whether we can have justified reward and punishment without moral responsibility – the answer is no. We need moral responsibility for our ascriptions of reward and punishment to be meaningful, to be more than arbitrary, to enable us to retain the value judgements of praise and blame, and for us to retain our dignity.

If reward and punishment are integral to our society, and if reward and punishment require moral responsibility, then moral responsibility seems to be a necessary concept in our lives.

Do we need to be free to be responsible?

Above I asked the question of whether we could have freedom without responsibility, and the answer was a complex one. I will now once again look at whether freedom is required for responsibility. I will do this by looking closer at what both libertarians and compatibilists hold to be necessary conditions of freedom. Though it is impossible to reconcile the two

⁶⁶ Smilansky, S. (2003). "Free Will and the Mystery of Modesty." American Philosophical Quarterly **40**(2): 105-117. Pg 112

⁶⁷ Smilansky, S. (2003). "Compatibilism: The Argument from Shallowness." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **115**(3): 257-282. Pg 266

⁶⁸ Strawson, G. (1994). "The Impossibility of Moral Responsibility." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **75**(1/2): 5-24. Pg 15-16

without begging the question, if we can find a set of integral conditions of freedom for both sides, we can compare these against conditions that are necessary for responsibility.

A key condition of responsibility for compatibilists is control,⁶⁹ while a key condition for libertarians is the availability of alternative possibilities.⁷⁰ (Though it must be stated that not all libertarians and compatibilists are committed to these views, but they are still, perhaps, the most popular views). Below I will look at both of these, though I must note here that a libertarian also requires control. That is, a libertarian requires both control and the presence of AP, while a compatibilist only requires control. This consensus about the requirement of 'control' for responsibility is going to be crucial for my argument. While the libertarian and compatibilist interpretation of control is different, that they both require some form of origination of the action to be in the agent, is integral for my later argument. I will go on from this section to argue that a common form of attributing compatibilist control – attributing actions to the reasons or motivations of the agent – is impossible under Laplacian Determinism.

Before I define and assess both control and AP, I must first set up what conditions both of these types of freedom require in order to confer responsibility worth wanting. These conditions are the ability to connect the act to the person, and the ability to differentiate between the responsibility-mitigating circumstances of coerced acts, unintentional acts, and intentional acts. Once I have done this I will assess whether control and AP can allow for these conditions.

People, not acts, are responsible

It is the agent, not the act, that is responsible. As Haji puts it, ~~appraisals~~ appraisals of responsibility are first and foremost appraisals of the agent; they disclose the moral worth of an agent with respect to some episode in her life".⁷¹ What makes us responsible then, or at least according to some philosophers, is something *about* or *internal* to the agent, not some external fact about the act as it played out. While external factors can come into our consideration, if

⁶⁹ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." *Neuroethics Online First* (25 February 2010).

⁷⁰ Kane, R. (2002). Introduction: The Contours of the Contemporary Free Will Debate. *The Oxford Handbook of Free will*. R. Kane. New York, Oxford University Press: 406-440. Pg 10

⁷¹ Haji, I. (2003). "Alternative Possibilities, Luck, and Moral Responsibility." *The Journal of Ethics* 7(3): 253-274. Pg 269

certain conditions do not pertain within the agent, then there cannot be an ascription of responsibility.

In my assessment of 'responsibility worth wanting' above, it was noted that a system of justified reward and punishment must be able to avoid moral luck. Moral luck, to repeat, is the circumstance where a person's deserts are not connected to their actions. We are not rewarded because we do some praiseworthy deed, and we are not punished for some blameworthy action – our deserts are not 'reactions' to our actions, as they should be, but consequences meted out in spite of what we have done. This disconnect between action and reward/punishment is a reprehensible thing, as many philosophers have noted,⁷² and indeed, has been experimentally shown to lead to apathy and socially maladaptive behaviour.⁷³

It is, therefore, a key condition of responsibility worth wanting that it has some way of connecting actions to people, so that people can be rewarded and punished based on what they have done, not solely on the situation in which they find themselves. But this is not the only condition essential to ensuring responsibility worth wanting. It is not the case that we want to be 100% accountable for every single action we commit. There are situations that can affect how we act by limiting or expanding our opportunities. That is, while we want to be responsible for our actions, we also want that responsibility to be appropriately sensitive to the situation.

There are three conditions, in my opinion, that we want to be able to mitigate our responsibility. We want to be able to differentiate between acts that are coerced, acts that are unintentional, and acts that are intentional. If we are forced to empty a bank vault at gunpoint, we do not want to be held responsible for theft. If we unintentionally harm someone, we do not want to be held responsible – though how responsible we are would be dependent on how preventable the action was and whether proper precaution/foresight was used. And finally, we want to be held responsible, and to be able to hold others responsible, for those acts they do completely intentionally – if we cure cancer through our best efforts, then we want full reward; if someone commits premeditated murder intentionally, then we want to be able to hold them fully accountable for that.

⁷² Smilansky, S. (2003). "Compatibilism: The Argument from Shallowness." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **115**(3): 257-282. Pg 266

⁷³ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." Neuroethics **Online First**(25 February 2010).

I will now analyse both control and AP to see whether they can connect a person to their act, and to see whether they can differentiate between coerced, unintentional, and intentional acts.

Control

"One issue concerns an account of the powers and capacities which an agent exercises when she acts; a distinct issue concerns the alternatives available to an agent at the time of action." McKenna⁷⁴

As above, McKenna has identified two issues integral to understanding freedom: one is the issue of "alternatives available" and the other is the "power and capacities" of an agent. It is the last of these that interests me here, and which forms the essential conditionalist requirement for freedom I simply refer to as 'control'. This condition of control is vitally important to understanding the compatibilist view point,⁷⁵ for it is that which links an agent to their action, ensuring it is them, and not the circumstances they find themselves in, that is responsible.⁷⁶ It is what gives us our 'power', with Berofsky noting, "I will argue that, if determinism does constitute a threat to freedom, that threat derives solely from its (alleged) threat to power".⁷⁷ Ekstrom goes further, noting that issues of responsibility are "dependent upon the extent to which we can control our actions, or, in other words, upon the issue of whether or not we have freewill".⁷⁸

One of the primary issues for compatibilism is linking worthwhile freedom to a determined universe. For, a usual condition of determinism requires there be one possible future from one given past.⁷⁹ However, if every possible event is 'rigged' in this way from the beginning of time, then how can one person be free in any true sense of the word? Or more specifically, how can they be free in a way that links them to their actions, which is required by responsibility worth wanting? The compatibilist answer is control. To repeat Jennings again,

⁷⁴ McKenna, M. S. (1998). "Does Strong Compatibilism Survive Frankfurt Counter-Examples?" *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* **91**(3): 259-264. Pg 260

⁷⁵ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." *Neuroethics Online First*(25 February 2010).

⁷⁶ Smilansky, S. (2003). "Compatibilism: The Argument from Shallowness." *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* **115**(3): 257-282. Pg 264

⁷⁷ Berofsky, B. (2006). "The Myth of Source." *Acta Analytica* **21**(4): 3-18. Pg 4

⁷⁸ Ekstrom, L.A. (2002). Libertarianism and Frankfurt-Style Cases. *The Oxford Handbook of Free will*. R. Kane. New York, Oxford University Press: 406-440. Pg 309

⁷⁹ Harding, G. (1997). "Free Will and Determinism: Why Compatibilism is False." *Erkenntnis* **47**(3): 311-349. Pg 227

freedom requires holding within oneself the determinants of action.⁸⁰ In other words, it requires you to be both the location and provisional origin of your actions. And this leads to control, in one sense of the word (as above, and below, libertarians have a different definition of what freedom-conferring control might be). 'Control', in this sense, is power of location. Somebody is in control when they are acting for internal reasons, more so than external reasons. Somebody is not in control when external reasons have undue power over their actions (coercion). Control, then, is a balance between internal and external forces. But how is this line drawn between internal and external influence, given that the state of the world before an individual is born dictates all their actions? Personally, I do not find this position convincing, and of all the problems with the compatibilist view, I find this to be by far the most important. But for the interests of this thesis, it is enough here to note that compatibilists often secure freedom through this type of control.

The relation between freedom-conferring control and responsibility is a very intimate one, a fact that has been noted by many philosophers. Haji has commented on this relationship, noting the direct link between control and freedom: what you control you are responsible for, and what you do not control you are not responsible for.⁸¹ Smilansky goes so far as to categorise the entire free will problem as being about control, to him "control and its absence" must be taken "very seriously, particularly when judging ourselves and others".⁸²

But can control link a person to their acts, and can it differentiate between coerced, unintentional, and intentional acts? By locating control within the agent, this condition certainly can link a person to their acts. And control certainly does seem to be able to differentiate between different types of acts. Coercion is a situation in which the environment has more control over a person's acts than they do (it can include direct physical coercion, mental coercion, hypnotism, the effects of drugs, and so on). Unintentional acts are those in which the person did not specifically exercise their control of a situation to bring about a certain outcome, but this does not necessarily absolve them of responsibility, as coercion does. For an act to be truly unintentional, or accidental, we must first give some thought about whether a person could have reasonably foreseen the outcome, and whether they could

⁸⁰ Jennings, H. S. (1919). "Experimental Determinism and Human Conduct." The Journal of Philosophy and Scientific Methods 16(7): 180-183. Pg 182

⁸¹ Haji, I. (2003). "Alternative Possibilities, Luck, and Moral Responsibility." The Journal of Ethics 7(3): 253-274. Pg 270

⁸² Smilansky, S. (2003). "Compatibilism: The Argument from Shallowness." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition 115(3): 257-282. Pg 261

have exercised control of previous actions to avoid it. Finally, intentional acts are those that we have control over: acts that can be reasonably described as originating within ourselves rather than the environment. It is this last category of acts that attracts full responsibility.

To recap, control is a compatibilist freedom-conferring condition that does engender responsibility worth wanting. It connects us to our acts, and can successfully differentiate between responsibility-mitigating circumstances.

Now I will assess AP, the Libertarian inroad for responsibility-conferring freedom.

Alternative Possibilities

"The criterion for deciding whether a defect is moral is 'Could the agent have acted otherwise?'" Nowell-Smith⁸³

The principle of alternative possibilities (often simply known as alternative possibilities, or AP) is the notion that, in order for a person to have genuine freewill, they must be able to choose between a range of possibilities for any given choice. That is, it must be the case that given Action A, the agent had the option, at the time of their choice, to do Action B, C, and so on. According to McKenna, AP "concerns the alternatives which are available to a person in the circumstances in which she acts".⁸⁴ While certain authors hold only that one requires alternatives to action, not choice,⁸⁵ to others, such as Bourke, alternative possibilities are what makes *choice* real, and thus *responsibility* real.⁸⁶

But how are we to understand this condition of AP? As Campbell put it, "his expression 'could have acted otherwise' stands in dire need of analysis".⁸⁷ Are we to take it, as O'Connor does, that the "standard incompatibilist analysis of our ability to choose otherwise is just to say that an alternative choice might have been made in precisely the same circumstances"?⁸⁸ What kind of concept of time and space are we committed to if we hold it possible that at the

⁸³ Nowell-Smith, P. (1948). "Freewill and Moral Responsibility." *Mind* 57: 45-61. Pg 49

⁸⁴ McKenna, M. S. (1998). "Does Strong Compatibilism Survive Frankfurt Counter-Examples?" *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 91(3): 259-264. Pg 260

⁸⁵ Mandelbaum, M. (1960). "Determinism and Moral Responsibility." *Ethics* 70(3): 204-219.

⁸⁶ Bourke, J. (1983). "Responsibility, Freedom and Determinism." *Philosophy* 13(51):276-287. Pg 280

⁸⁷ Campbell, C. A. (1951). "Is Freewill a Pseudo-Problem." *Mind* 60(40): 441-465. Pg 452

⁸⁸ O'Connor, T. (1993). "Indeterminism and Free Agency: Three Recent Views." *Philosophy and Phenomenological Research* 53(3): 499-526. Pg 516

moment of choice, categorically, there is more than one possible action available to us, and that it is solely our choice which will decide this future? It seems, just as with the compatibilist condition of control, the libertarian condition of AP is mysterious. Both concepts seem fraught with problems, problems that there simply is not room to go into here.

The question we must ask of AP is whether it can connect a person to their actions, and whether it can differentiate between coerced, unintentional, and intentional acts. Can AP link a person to their actions? By locating freedom in the capacity of the individual to choose between genuine, actionable alternatives of action, AP affords a far greater and more intimate connection between a person and their actions. It is not just the person as a location of causes that affords freedom, but it is some indivisible attribute of the agent that affords them with freedom, and thus responsibility. To put this another way, if we have real AP, then it is not the case that the state of the whole universe prior to our choice will dictate what that choice will be. What we choose, at any given instant, rests on that attribute within us that allows us to recognise possible alternative for action and to choose between them. This is the indivisible attribute that entails responsibility. Thus, AP very much links a person to their behaviour, and it does this through affording the agent 'buck stopping' choice, as some authors would put it.

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Can the ability to choose between possible alternative actions distinguish between coerced, unintentional, and intentional acts? A coerced act becomes one where a person's alternatives for action are removed, or severely reduced (though some authors hold that alternatives can never be completely removed,⁹⁰ as alternatives form a range of possible behaviours,⁹¹ and should not be understood as discrete variables).⁹² An unintentional action becomes one where a person did not explicitly exercise their choice to affect the outcome. And an intentional action becomes one where the agent specifically chose the behaviour and they had a range of possible behaviours available to them.

⁸⁹ Strawson, G. (2002). The Bounds of Freedom. The Oxford Handbook of Free will, R. Kane. New York, Oxford University Press: Pg 452

⁹⁰ Clarke, R. (1992). "Free Will and the Conditions of Moral Responsibility." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **66**(1): 53-72. Pg 61

⁹¹ *Ibid.*

⁹² Pettit, G. (2002). "Are We Rarely Free? A response to Restrictivism." Philosophical Studies **107**(3): 219-237. Pg 233

Choosing between freedoms – compatibilist or libertarian?

It seems that, upon analyses, both compatibilist control and libertarian AP can afford us with responsibility worth wanting. The question now becomes can they both be right? Is it the case that either control or AP affords us responsibility? Or are both required as necessary conditions?

Libertarian freedom does not just require AP, but, as above, it also requires control. That is, it requires not just that the agent be genuinely able to choose between real alternatives, but that there is a connection between the agent and that choice, ensuring it is the agent that makes the choice and not simply some indeterministic quantum accident. While the control it requires is different from compatibilist control, put simply, both forms require that the agent have 'location control' over their actions, ensuring that those events leading up to an action that can be identified as the key causes are within the agent and not external. In this way, both libertarian and compatibilist freedom share a condition. Perhaps this is grounds, then, to agree that control seems to be a *general*, pre-theoretical requirement of responsibility-conferring freedom.

The next question to ask is, if control is germane to both kinds of responsibility-conferring freedom, is AP a necessary or simply extra condition? Is AP an actual requirement of responsibility? Or is it some extra fact that can change responsibility, but does not mean we do not have it if alternative actions are not available to us?

In order to set up the analysis of compatibilist reasons-based freedom in Chapter Three, I must now show why compatibilists do not believe that AP is a necessary condition of responsibility. This is a necessary step in analysis, for if there was no argument against the necessity of AP for responsibility-conferring freedom, then the question of whether reasons-based freedom is compatible with Laplacian Determinism would be a moot point. No type of responsibility-conferring freedom could ever be compatible with determinism if determinism required only one possible future from one set past, therefore theoretically ruling out AP.

Compatibilists, however, do have a set of arguments that attempt to show that alternative possibilities are not necessary for responsibility. Chief among these are the Frankfurt Style Arguments. I will now briefly run through these arguments in order to better substantiate this compatibilist claim.

There is a considerable chunk of this debate set aside to discussing Frankfurt Style Arguments alone, however my analysis here will be brief. Essentially a Frankfurt Argument sets up a scenario where an agent in a purportedly indeterministic world comes to make a decision about something, usually murdering someone unfortunately, but unbeknownst to them, an evil scientist has made it that if they choose *not* to commit murder the scientist will intervene and *force* them to commit murder anyway. Now, if the scientist does not have to intervene – if the agent chooses to murder anyway – *surely* they are responsible for that act? This type of example is said to show that even though the agent could not *act* differently (because the scientist would coerce them if they *chose* differently) they are still morally responsible. As Hunt puts it: —“The job of the Frankfurtian objector is to produce a single case in which PAP [the Principle of Alternative Possibilities] fails, not to show that it never succeeds”.⁹³ And by showing that PAP is not a necessary condition of moral responsibility, the —compatibilist argument - that causal determinism, if true, does not undermine moral responsibility” is thought to be strengthened.⁹⁴ According to Haji, if Frankfurt Arguments work, it makes —it considerably easier to argue for the view that causal determinism is compatible” with moral responsibility.⁹⁵

The success of Frankfurt Arguments is attestable, with authors such as Levy referring to the fact they establish moral responsibility in situations with no possibility of AP, as —“all established”.⁹⁶ Pereboom calls them —powerful and resilient”, noting that they do not just show that we do not need alternatives to action to be justifiably responsible, but we do not appear to need alternatives to *choice* either.⁹⁷

The popularity of Frankfurt Arguments is not simply restricted to compatibilists, however, with many well-known libertarians accepting that they offer if not a killing blow, then at least a crippling blow to the need for AP for moral responsibility. For instance, according to Stump:

⁹³ Hunt, D. (2007). "Black the libertarian." *Acta Analytica* 22(1): 16-28. Pg 8

⁹⁴ Brown, V. (2006). "Choice, Moral Responsibility and Alternative Possibilities." *Ethical Theory and Moral Practice* 9(3): 265-288. Pg 266

⁹⁵ Haji, I. (2006). "Frankfurt-Type Examples, Obligation, and Responsibility." *The Journal of Ethics* 10(3): 255-281. Pg 256

⁹⁶ Levy, N. (2002). "Excusing Responsibility for the Inevitable." *Philosophical Studies* 111(1): 43-52. Pg 43

⁹⁷ Pereboom, D. (1995). "Determinism al Dente." *Noûs* 29(1): 21-45. Pg 27

“Of course, to say that PAP is false is not to say that, outside science fiction stories, there are morally responsible agents who never have any alternative possibilities for action. Rather, what I think the preceding arguments show is only that having alternative possibilities for action is not essential to moral responsibility.”⁹⁸

Such an acceptance from the Libertarian camp is curious, however, for the compatibilist has raised the Frankfurt Style Argument for one purpose – to kill AP completely, not just to relegate it to a *possible* condition of moral responsibility, but to make it an *irrelevant* one. As Haji points out, “If, however, Frankfurt-type counterexamples to PAP are successful, then global Frankfurt-type cases... should be successful as well”.⁹⁹ And a global Frankfurt example is nothing more than compatibilism itself. For if there was a world where no one could *act* any differently, but they could still retain the responsibility that Frankfurt examples purport to afford them – then the compatibilist has won.

In the larger view of my thesis, if Frankfurt Arguments can be seen to be successful, it makes more likely the claim that you *can* have significant responsibility under LD by removing the block of genuine alternatives for choice and action. That being said, the question remains, *are* Frankfurt examples successful? Do they actually achieve what they set out to? Do they conclusively show that AP is not a necessary condition of responsibility?

Below I will briefly address some rejoinders to Frankfurt Style Arguments, including some thoughts of my own.

Frankfurt rejoinder

“But it is crucial to ask what is being imagined here, and whether the shock to our intuitions is not induced by irrelevant features of the case.”¹⁰⁰

The quote above, though not actually relating to Frankfurt Arguments, seemed a nice way to set up this section nonetheless. For if it can be found that the intuition on which the Frankfurt

⁹⁸ Stump, E. (1999). "Alternative Possibilities and Moral Responsibility: The Flicker of Freedom." The Journal of Ethics 3(4): 299-324. Pg 320

⁹⁹ Haji, I. (2003). "Flickers of Freedom, Obligation, and Responsibility." American Philosophical Quarterly 40(4): 287-302. Pg 299

¹⁰⁰ Watson, G. (1987). "Free Action and Free Will." Mind 96(382): 145-172. Pg 152

Argument plays is somehow misplaced, then it loses its ‘power and resilience’. It is, of course, not the mainstream view among philosophers, but there has been a lively debate over the efficacy of these arguments. From Widerker’s claim that they beg the question against the indeterminist,¹⁰¹ to Fischer’s view that they still afford the agent with a ‘flicker of freedom’,¹⁰² there are rejoinders to this argument.

My own view, like Widerker, is that at least in mainstream Frankfurt Arguments, determinism is usually hidden away in the ‘prior signs’ that tell the evil manipulator what decision the agent will make before they make it.¹⁰³ And begging the question in this way is unacceptable. For, according to Pereboom, “for any Frankfurt-style case, if causal determinism is assumed, the libertarian will not have and cannot be expected to have the intuition that the agent is morally responsible”.¹⁰⁴ For precisely what is at stake is *whether* alternative possibilities are required for the libertarian – it is these genuine APs that are *incompatible* with determinism, if they can be removed, then libertarianism seems to lose its power. However, if it can be shown that the Frankfurt Arguments can only work in a deterministic universe, then the intuition of their success is misplaced.

It is my own intuition, like Widerker, that Frankfurtian examples assume determinism when they establish the counterfactual response of the nefarious manipulator (traditionally called Black) with perfect certainty. That is, they establish that in every possible scenario (or every possible world) Black will make Jones (the traditional name of the agent) commit murder if he shows any sign of resisting. And only in a causally deterministic world can such certainty be maintained. If they did not assume this counterfactual certainty, they would have to phrase their argument, as Adams has pointed out, in terms of Jones or Black *probably* doing something.¹⁰⁵

There are more problems with this argument though, or at least in my opinion. There is something to these examples that is arbitrary, that is a factor more of language than reality.

¹⁰¹ Widerker, D. (1995). "Libertarianism and Frankfurt's Attack on the Principle of Alternative Possibilities." *The Philosophical Review* 104(2): 247-261. Pg 255

¹⁰² Stump, E. (1999). "Alternative Possibilities and Moral Responsibility: The Flicker of Freedom." *The Journal of Ethics* 3(4): 299-324. Pg 299

¹⁰³ Widerker, D. (1995). "Libertarianism and Frankfurt's Attack on the Principle of Alternative Possibilities." *The Philosophical Review* 104(2): 247-261.

¹⁰⁴ Pereboom, D. (2001). "Alternative Possibilities and Causal Histories." *Noûs* 34: 119-137. Pg 120

¹⁰⁵ As quoted in: Widerker, D. (1995). "Libertarianism and Frankfurt's Attack on the Principle of Alternative Possibilities." *The Philosophical Review* 104(2): 247-261. Pg 250

Saying that someone has only the option to murder someone or not to, is to restrict their behaviour to be represented by these two states. When really any number of eventualities may occur, but would be arbitrarily defined as either performing the act or not performing the act: Jones could trip on his way to pulling the trigger, he could stop for an ice cream, he could be distracted by the sudden world-destroying meteor that was headed for Earth. Now, if the language we use in these arguments can't account for such variation, should this not be an indication that something is wrong? You never face two neat choices; there is a continuum of difference in time, place, body movement, etc. Yet no Frankfurt Argument gives the person the ability to just not do anything at all, to not make a decision, to just procrastinate until everything goes away – or to stop and smell the roses. It is this choice to represent whatever happens as being a discrete case of murder or not-murder that seems to restrict Jones' freedom more than any other thing. To put it in another way, the method of representation used is not sensitive enough to pick up the variation within what is being measured – for no two murders are alike, and there is choice *within* that meta-fact of murder that will set it apart, make it individual, make it *free*. Murdering someone with no regret is different from murder with some regret, is different again to murdering someone with substantial regret. While Frankfurt examples will not allow Jones *not* to murder, they speak nothing of whether he can hesitate, go through the action impassively, or undertake it with deep satisfaction. They are only interested in two categories of action – murder and not-murder – and offer us no tool to differentiate between all the different actions that could constitute these groups. Because the fact of the matter is, hesitating before you murder someone (which is not explicitly denied by Frankfurt examples, as long as Jones does not actually end up not performing the murder) *is* different from murdering someone gleefully. This inability to differentiate between types of action (unhappy murder/gleeful murder) means that the actual ascription of responsibility available under Frankfurt examples is equally reduced. Responsibility, like freedom, is perhaps best understood as a continuous variable, not as a discrete variable.¹⁰⁶ Meaning that subtleties within a situation change the amount of responsibility we have, rather than some state deciding whether we are fully responsible, or not responsible at all.

¹⁰⁶ Pettit, G. (2002). "Are We Rarely Free? A response to Restrictivism." Philosophical Studies 107(3): 219-237. Pg 233

To put this all another way, if the ability of ascriptions of moral responsibility to be sensitive to the situation is an important one, then I argue that Frankfurt examples fail to do this. Because they are constructed in such a way that only the deed matters, and not how or for what reasons the deed was done – then why should we believe that the type of responsibility Frankfurt arguments salvage should be capable of this sensitivity? That is, if it is important for how responsible a person is for murder, for example, to ascertain the situation they were in and the reasons for which they acted (their motivations, attitude, etc.), and that this may change how responsible they are, then why isn't this type of responsibility entailed in Frankfurt examples? And if it isn't entailed, but it's really important, why should we believe that Frankfurt examples vouchsafe these qualities? In other words, I would find these arguments more convincing, and the responsibility they talk of more alluring, if it was couched in terms sensitive enough to pick up changes in the agent's environment and motivations. Otherwise, I find it hard to identify with Frankfurt-type responsibility at all.

Another aspect of Frankfurt Arguments that does not sit well is the amount of control that the evil scientist would need to set the situation up and make it run *precisely* the way he wants. We must remember these examples are represented as either-or examples – as ‘*this will happen, or that will happen*’. Jones will choose to kill, or he will be forced to kill. Now, notwithstanding the level of control Black would need to have over Jones (and the problem of somehow finding neurological cues to mental states that are usually one-to-many phenomenon),¹⁰⁷ how will Black hold *the rest of the universe steady*? How will he prevent Jones from tripping at the crucial moment before he makes the decision – and then thinking about something else instead? Or how will he stop Jones from running into his old preacher friend, the one who really doesn't like murders, or indeed, running into his own mother who desperately needs a hand repainting her kitchen? The point is, if we keep Jones as a real, functioning agent in these examples, we must accept that he *will continue to interact with his environment*. And, just as a functioning agent should, he can alter his behaviour in light of his environment (indeed, one condition of being a reasonable agent is precisely this ability to alter our actions in light of the situation we find ourselves in)¹⁰⁸. Now the manipulation Black must exert is growing larger and larger – not only must he hope to control all of Jones' environment so that Jones does not exert free will in some other choice that takes him away

¹⁰⁷ Stump, E. (1999). "Alternative Possibilities and Moral Responsibility: The Flicker of Freedom." The Journal of Ethics 3(4): 299-324. Pg 306

¹⁰⁸ MacIntyre, A. C. (1957). "Determinism." Mind 66(261): 28-41. Pg 35

from Black's murder/forced-to-murder game – but he has to be perfectly certain his prior sign of Jones' choice will work. Unless of course, Black will only *probably* make Jones murder if he chooses not to, thus making it probable that Jones can in fact *act* otherwise. Now, the question is – if the Frankfurt supporter accepts this, and accepts that Black can only probably make Jones murder someone – does this undermine, or simply dilute the effectiveness of these arguments? Because the entire power of the Frankfurt argument is based on showing one example of a case where someone is responsible for an action even though they could not actually *act* differently, Frankfurt examples *have* to establish that the agent cannot act differently. If they cannot establish this categorically, then they cannot be an inroad for compatibilist freedom. The point that is critical for understanding this argument is that Black must totally eliminate Jones' ability to choose otherwise (and that this must be done in a conceivable way). If Jones can choose not to murder, but chooses to murder anyway, then Jones is responsible for that choice in the kind of way that AP requires – that he had available to him alternatives for action, but chose specifically one. Thus, the AP confers the responsibility. For Frankfurt arguments to work, they really have to 100% prove, in a convincing way, that Jones doesn't have AP anymore, because if he does, he is responsible for his choice because of this AP. I believe that Frankfurt examples fail to eliminate this AP in a conceivable way – that is, they eliminate AP, not by showing it is unnecessary in an indeterministic world, but by constructing an example that cannot allow for the indeterminism that AP requires.

Whether the counter-arguments I have addressed above are successful or not is not actually the question of this thesis. They were included in the interests of offering a comprehensive analysis. The fact remains that, regardless of the problems I have addressed, of which I myself am convinced, most philosophers believe Frankfurt examples actually do achieve what they set out to.¹⁰⁹ So, for the sake of the rest of this thesis, I am going to assume Frankfurt examples work. I do this because if Frankfurt examples do not work, and we do not have a good reason to believe that there are any forms of responsibility-conferring freedom that are compatibilist, then the question of whether reasons-based freedom is compatible with LD becomes a moot point. We would have little reason to believe that any freedom worth wanting would be compatible with any form of determinism. If I can at least state that

¹⁰⁹ Levy, N. (2002). "Excusing Responsibility for the Inevitable." *Philosophical Studies* 111(1): 43-52. Pg 43

compatibilism is an intelligible concept (though not one I personally agree with), then I can go on to assess whether a type of compatibilist freedom is compatible with a type of determinism. If compatibilism does not even make sense, there seems to be no point in continuing this argument!

In summary, this chapter has sought to establish the following: that freedom is a valuable concept because responsibility is a valuable concept. That is, any freedom worth wanting must ensure we have responsibility, and it is freedom's ability to entail responsibility that makes freedom so important. Responsibility, in turn, is important because it justifies our reactive attitudes, from praiseworthiness to forgiveness. There are different types of responsibility-conferring freedom, but a popular compatibilist kind locates freedom in the ability of the agent to be the controlling location of their action. Compatibilists reject that the availability of alternative possibilities for choice is a necessary condition of freedom, and they achieve this through, in part, Frankfurt Arguments.

Now all of this has been established, I will go on in the next chapter to assess the specific type of compatibilist freedom that the rest of this thesis will deal with – reasons-based freedom.

Chapter Three – Reasons-Based Freedom

Introduction and structure of this chapter

This chapter will be quite short. However, it will set up an integral part of the argument for this thesis. This chapter will be devoted to explaining what reasons-based freedom is.

Within this chapter, I will first analyse what reasons are, then I will flesh out what reasons-based freedom is, before arguing that it can confer responsibility worth wanting.

What are reasons and what is reasons-based freedom?

What are reasons, and why should they play such a prominent role in compatibilist freedom? Just as the notion of freewill has many interpretations, so too the notion of a reason has many interpretations, and with those interpretations come different ideas of what role reasons play in conferring freewill.. According to Pereboom, it is through the evaluation of reasons that we choose between options of deliberation.¹¹⁰ However, this definition does seem to require some concept of AP (as it seems to imply that reasons are the means by which we actively choose between two possibilities of action), and thus may beg the question against the compatibilist. For a more compatibilist-friendly definition, Fischer links reasons to having a “stake” in something.¹¹¹ That is, we have a reason to act in some way when we believe that action will lead us to some goal we want or away from some goal we do not want. Reasons, in this way, are goal oriented. Haji calls them “practical reasons”, insofar as they are things we do, or beliefs we hold, that are directed at achieving something we want.¹¹² There is a further condition of rationality beyond goal orientation though, and that is the sensitivity of our reasons to our environment. MacIntyre draws attention to this when he notes, “Rational behaviour is defined with reference to the possibility of altering it”.¹¹³ Pereboom seems to agree with this concept when he admits that if practical reasoning did not change in different circumstances, then it would hardly be a condition of morality or responsibility.¹¹⁴ Once

¹¹⁰ Pereboom, D. (2008). "A Compatibilist Account of the Epistemic Conditions on Rational Deliberation." *The Journal of Ethics* 12(3/4): 287-306. Pg 291

¹¹¹ Fischer, J. M. (2004). "Responsibility and Manipulation." *The Journal of Ethics* 8(2): 145-177. Pg 149

¹¹² Haji, I. (2009). "Freedom and Practical Reason." *Ethical Theory and Moral Practice* 12(2): 169-179. Pg 170

¹¹³ MacIntyre, A. C. (1957). "Determinism." *Mind* 66(261): 28-41. Pg 35

¹¹⁴ Pereboom, D. (1995). "Determinism al Dente." *Noûs* 29(1): 21-45. Pg 22

again, this may be more of a libertarian requirement than a necessary compatibilist condition of reasons.

The concept of reasons, then, seems to be a multi-layered one that can come in different compatibilist or libertarian flavours. As above with our analysis of freedom, let us enquire whether there is some condition of reasons that is common to both the compatibilist and libertarian? In other words, is there a general necessary condition of 'acting for reasons', such that it can link actions to an agent in a responsibility-conferring way? The answer to this, in my opinion, is that reasons must be able to account for our behaviour if they are to be used to confer responsibility. Reasons must be capable of counting as justified explanations of our behaviour if they are to have the type of relationship to our actions that can mitigate our responsibility. And what is meant by the terms 'acting for' and 'justified explanations' (as used above)? It is my opinion that in order for a reason to have an acceptable or believable role in an explanation of our behaviour, that reason must not simply be present at the time of the action, but have an integral role in bringing said behaviour about. And, further to this, a 'justified explanation' then becomes one in which the reason plays a crucial and (critically) believable role in explaining how the behaviour came about. (For a full account on what an explanation is, and just how one can be more justified or believable than another, please see the chapter on explanations below.) In other words, if you want acting for reasons to be able to enable responsibility-conferring freedom, then they must be able to link a behaviour to an agent, and distinguish between coerced, unintentional, and intentional acts.

Now that it has been suggested that reasons, in order to confer responsibility, must be able to explain our actions, we can begin to assess what reasons-based freedom might be, before exploring this relationship between explanation and reasons-based freedom further.

This ability to act for reasons is a popular compatibilist condition for freedom within the contemporary debate,¹¹⁵ with Nahmias calling reasons the "primary conditions required for free will".¹¹⁶ Baumeister et al, in turn state, "If free will is not rational choice, self-control, planning, and initiative, we find ourselves unable to surmise what it might then be".¹¹⁷ Mills

¹¹⁵ Feldman, R. and A. A. Buckareff (2003). "Reasons Explanations and Pure Agency." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **112**(2): 135-145. Pg 135

¹¹⁶ Nahmias, E. (2006). "Close Calls and the Confident Agent: Free Will, Deliberation, and Alternative Possibilities." Philosophical Studies **131**(3): 627-667.

¹¹⁷ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." Neuroethics **Online First**(25 February 2010).

goes on to note, “any plausible non-eliminativist view of free will must accommodate the explanatory force of reasons”.¹¹⁸ The best formulation of this relation is in Fischer and Ravizza’s notion of ‘reasons responsiveness’, which McKenna sums up as action “generated from a mechanism that itself is responding to reasons”.¹¹⁹ According to Mills, it is our responsiveness to reasons that “distinguishes free agents from constitutionally unfree ones like animals”.¹²⁰ Sie and Wouters have also noted that acting for reasons is a popular contemporary condition for freedom: “According to a strong and influential current in philosophy, it is rather the ability to act for reasons that is crucial to our everyday practices of personal responsibility”.¹²¹

It is “the ability to act for reasons” that I call reasons-based freedom. Perhaps the best example of this, as above, is Fischer and Ravizza’s reasons-responsiveness. It certainly is one of the better fleshed out theories. However, I have chosen not to specifically assess reasons-responsiveness in this thesis in an attempt to concentrate instead on the general compatibilist requirement of basing freedom on reasons (which, in turn, is based on our ability to control our actions, in a compatibilist sense)¹²². If conferring responsibility really is linked to acting for reasons by contemporary philosophers, as Sie and Wouters have argued, then there seems to be some logic in assessing this generalised condition. For if, as I shall argue, any reasons-based freedom is not compatible with Laplacian Determinism, then by extension that means popular examples of this type of theory, like reasons-responsiveness, cannot be compatible with it either.

As suggested above, if we are going to use reasons to enable responsibility-conferring freedom, then we need them to be able to account for our actions. In this way, they can link our actions to responsibility in a sensitive enough way to differentiate between coerced, unintentional, and intentional acts. That is, if we are free when we act for our own reasons, and these reasons are linked to our desires through our goals, then we are coerced when we are forced to act despite our more personally preferred reasons. We act unintentionally when we do not specifically act through reasons (i.e. accidents, etc), and we act intentionally when

¹¹⁸ Mills, E. (2006). "The Sweet Mystery of Compatibilism." *Acta Analytica* 21(4): 50-61. Pg 52

¹¹⁹ McKenna, M. (2009). "Compatibilism & desert: critical comments on four views on free will." *Philosophical Studies* 144(1): 3-13. Pg 6

¹²⁰ Mills, E. (2006). "The Sweet Mystery of Compatibilism." *Acta Analytica* 21(4): 50-61. Pg 55

¹²¹ Sie, M. and A. Wouters (2010). "The BCN Challenge to Compatibilist Free Will and Personal Responsibility." *Neuroethics* 3(2): 121-133. Pg 121

¹²² Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." *Neuroethics Online First*(25 February 2010).

we act for our goal-oriented reasons. Therefore, reasons-based freedom can confer responsibility.

Is reasons-based freedom fully compatibilist, though, or does it require some hidden form of AP? I personally do not believe that compatibilist reasons-based freedom is coherent (but I am suspending my better judgement in order to further this analysis). However, as long as a compatibilist requires only that someone be *said* to have acted for reasons, and that their behaviour can, in some justifiable way, be explained by these reasons, then they do not require AP. Deliberating by considering reasons, and actually using reasons to actively choose between two real possibilities of action is one thing; explaining someone's actions through reasons, is another. And it is the latter, in my opinion, that is the absolute linchpin to this compatibilist view of freedom. Because, as was argued in Chapter Two, a necessary requirement of responsibility worth wanting is that it can justify our reactive attitudes. This justification can only stand if we can link a person to their actions. Reasons-based freedom does this by saying 'that person had reason to act in that way because they wanted to achieve some goal'. The action of the agent becomes justified (in that they are prudentially reasonable) by the reasons they had to act – and this explanation of their action is the inroad for responsibility.

Therefore, reasons-based freedom seems to be a popular compatibilist formulation of responsibility-conferring freedom, with authors such as Baumeister et al noting, —Two prominent, important meanings of free will involve virtuous self-control and rational action”¹²³. Reasons-based freedom manages to confer responsibility by linking agents to their acts through reasons. It is when we allow these reasons to account for why an agent did some action, that we can justify our reactive attitudes toward that agent. Thus, in order for reasons-based freedom to confer responsibility, reasons must be allowed to account for our acts.

Now that we have discussed the above, we must ask the following question: if reasons-based freedom requires that our reasons be able to explain our actions, what are explanations, and what makes a good explanation in an LD universe? This question will be addressed in Chapter Five.

¹²³ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." Neuroethics **Online First**(25 February 2010).

Chapter Four – Laplacian Determinism

This chapter is intended to describe exactly what Laplacian Determinism (LD) is, and, in doing this, argue for the fact that it is deterministic, and that is a specific type of determinism requiring, among other things, sufficient causation. The point that it is committed to exhaustive, sufficient causation is going to be integral for my overall thesis that LD is incompatible with reasons-based freedom. Or to put it another way, the type of determinism LD is will be shown to be far too restrictive to be compatible with reasons-based freedom.

To borrow a phrase from Cassirer, ethics —should not be forced to build its nests in the gaps of physical causation”.¹²⁴ I intend to make the argument in the following two chapters that because of the way LD is formulated, there simply are no gaps in physical causation within which we can rest our reasons-based freedom. Reasons-based freedom, as seen in Chapter Three, requires that our reasons be allowed to explain and account for our actions. Otherwise, we cannot rest our responsibility on them because they cannot be used to connect us to our actions in a way that can differentiate between coerced, unintentional, and intentional acts.

Structure of this chapter

This chapter will be split up into two different sections. In the first section, I will argue that LD is deterministic. I will do this by establishing that determinism requires, at least, that there be only one possible future from one set past. I will go on to argue that LD ensures this singular evolution of past to future by establishing that all events (future, past, and present) can be perfectly predicted from any time. In the next section, I will argue that LD is a specific type of determinism, requiring not only that one future be possible from one past, but that whatever it is that constrains this deterministic evolution of states, be naturalistic, and observable. This forces us to take a certain type of view towards the laws of nature and causation – a view that I will argue, in Chapter Six, constrains what we can accept as appropriate explanations, rendering LD incompatible with reasons-based freedom.

What is determinism, what is LD, and is LD deterministic?

Before I can address what LD is, and make an argument for it being deterministic, I must first define what determinism is.

¹²⁴ As quoted in: Margenau, H. (1967). "Quantum Mechanics, Free Will, and Determinism." The Journal of Philosophy 64(21): 714-725. Pg 722

Determinism

It would be convenient if it were possible to give a clear, succinct, agreed upon definition of determinism – however, such a thing is impossible. Throughout the literature of free will (or at least the humble slice that I have managed to read), no other thesis is defined in such different ways, with such different turn of phrase, and such different style. Below is an assortment of different definitions.

“Determinism is usually defined as the thesis that every event has sufficient causes” Duus-Otterström¹²⁵

“Determinism is simply the thesis that at any given moment there is only one possible future consistent with the past and the laws of nature.” Capes¹²⁶

“...if determinism is true, though, then at every instant, there is exactly one physically possible future; the future, in any deterministic world, is a branchless extension of the past.” Haji¹²⁷

“The past, the present or the timeless (or some combination of these) has narrowed down the number of possible futures to one.” Harding¹²⁸

This range of definitions raises certain questions: do they all identify or emphasise different necessary conditions of a single notion of determinism, or does each define a different thesis of determinism? Notice, that while the first two mention either sufficient causation or the laws of nature, the last two definitions are silent on precisely what mechanism introduces determination (leaving it open to be a religious determinism or something similar). The question we must ask from this range of definitions is are the features they indicate all necessary conditions of the one determinism, or all possible sufficient conditions of a determinism? Is it the case that each event having a sufficient cause and there being only one possible future and that it is the laws of nature that constrain the past, are each features that are just a part of the only deterministic thesis? Or can each of these combine in different ways, or stand alone, to denote different actual theses of determinism? This distinction is very important for understanding the thesis of Compatibilism. As Compatibilism proposes that

¹²⁵ Duus-Otterström, G. (2008). "Betting Against Hard Determinism." *Res Publica* 14(3): 219-235. Pg 228

¹²⁶ Capes, J. A. (2010). "Can 'Downward Causation' Save Free Will?" *Philosophia* 38(1): 131-142. Pg 137

¹²⁷ Haji, I. (2009). "Freedom and Practical Reason." *Ethical Theory and Moral Practice* 12(2): 169-179. Pg 169

¹²⁸ Harding, G. (1997). "Free Will and Determinism: Why Compatibilism is False." *Erkenntnis* 47(3): 311-349. Pg 227

freedom is 'compatible' with determinism - determinism would have to denote one thing, or Compatibilism would be a very wide sweeping thesis, or only true for some versions of determinism – which is an absolutely critical point for the main argument of this thesis. According to Gregory Harding, there certainly are different theses of determinism;¹²⁹ and he goes through each in his very interesting article *Free Will and Determinism: Why Compatibilism is False*”.

Is there, however, any point of commonality between these different definitions and types of determinism? Is there a shared necessary condition of determinism, such that it can be set apart from its antithesis, indeterminism? In my opinion, there is a common condition, and that is, as Harding noted above, that there can only be one possible future from a given past. Or, to put this another way, to categorise as a deterministic thesis there must be some sense in which the evolution of the system (the universe) is *determined* such that only one future state can eventuate. It is helpful to contrast this with indeterminism, then, which is commonly defined simply as the denial of determinism.¹³⁰ If a necessary condition of determinism is that the evolution of states is restricted to only one possibility, then an indeterministic universe is one where there can be any number of possible futures (given one past) greater than one.

It is this condition of one possible future from a given past that I will use to define determinism and against which I will argue that LD is a deterministic thesis.

What is LD?

LD is a theory of determinism that originated in a brief statement from Pierre-Simon Laplace in his work *A Philosophical essay on probabilities*”. The original statement (translated from French) is below:

“We ought then to regard the present state of the universe as the effect of its anterior state and as the cause of the one which is to follow. Given for one instant an intelligence which could comprehend all the forces by which nature is animated and the respective situation of the beings who compose it an intelligence sufficiently vast to submit these data to analysis it would embrace in the same formula the movements of the greatest bodies of the universe and those of the lightest atom ; for it, nothing would be uncertain and the future, as the past, would be present to its eyes.”¹³¹

¹²⁹

Ibid.

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Ekstrom, L. (2003). "Free Will, Chance and Mystery." *Philosophical Studies* 113(2): 153-180. Pg 155

¹³¹

Laplace, P. S., marquis de (1902). *A Philosophical essay on probabilities*. New York, J Wiley. Pg 4

This original statement of Laplace's contains the following notable features: a future being known where ~~nothing~~ would be uncertain" by a vast intelligence capable of comprehending ~~all~~ the forces by which nature is animated", ~~and~~ the respective situation of the beings who compose it"¹³². I draw attention to these three features because they equate to the more modern interpretation of LD, which states that (in principle at least) we could predict every single event in the universe, from past to future, if we know perfectly accurate laws of nature and could have a perfectly accurate set of boundary conditions – and were then able to compute these.¹³³ It is these three conditions that set LD apart, in my opinion, and that sum to make it deterministic, in the sense that it ensures only one possible future from a given past.

Before I go on to argue why these three conditions sum to make LD deterministic, I first want to establish that LD is in fact a popular theory. By popular theory, I mean here that many people choose to understand determinism in the way in which LD is formulated, making LD one of the more generalised forms of determinism. However, I also mean to say that LD is a more popularly held theory than other forms of determinism, and indeterminism, especially in the field of science. I want to establish this because, if LD is popular, and if Sie and Wouters are right, and acting for reasons is a popular compatibilist inroad for freedom,¹³⁴ then it makes the conclusion that these two notions are incompatible far more important.

LD has been referred to by some authors to be the ~~ordinary~~ doctrine of determinism".¹³⁵ In particular, LD has found great popularity within the fields of science and philosophy, with Bishop noting that this vision of Laplace's ~~has~~ exerted a very strong influence on the practice of physics and other sciences as well as on philosophy up to the present day".¹³⁶ This makes LD not just a popular thesis, but an influential one as well. And if LD really has had a ~~very strong influence~~" as Bishop states, and acting for reasons really is such a popular in

¹³² *Ibid.*

¹³³ Bishop, R. (2002). Chaos, Indeterminism, and Free Will. The Oxford Handbook of Free will. R. Kane. New York, Oxford University Press: Pg 112

¹³⁴ Sie, M. and A. Wouters (2010). "The BCN Challenge to Compatibilist Free Will and Personal Responsibility." Neuroethics 3(2): 121-133. Pg 121

¹³⁵ Margenau, H. (1967). "Quantum Mechanics, Free Will, and Determinism." The Journal of Philosophy 64(21): 714-725. 718

¹³⁶ Bishop, R. C. (2003). "On Separating Predictability and Determinism." Erkenntnis 58(2): 169-188. Pg 180

road for freedom,¹³⁷ then it makes the fact that these two theses could be incompatible far more important.

One further matter that bears addressing is whether the LD, as defined above by Laplace, is indeed the same formulation that has, and continues to, exert such influence on science and philosophy to date. While it can be argued that the concept of internal perfect predictability (which appears to be a key tenant of Laplace's original formulation) has already been killed off, as it were, as an incoherent concept, it does not seem that the message has reached all that far. As Snyder elegantly puts it this doctrine of universal causal determinism has a certain sweeping grandeur which survives successive attempts at analyzing it into more specific views.¹³⁸ It seems to me (and I am possibly quite wrong) that in-principle predictability cannot so easily be removed from LD, as indeed, many modern authors are still using the original definition of which it is an embedded feature.¹³⁹ To repeat, whilst the concept of in-principle perfect predictability has been (in my view) successfully attacked in the past – I do not believe that this has had the reach intended; the original formulation of LD (which requires in-principle perfect predictability) is still being used to day. And it is this definition that I will address in this thesis.

Now that I have defined LD and established it to be a popular and influential thesis, it is time to show how it secures determinism.

How does LD secure determinism?

LD secures determinism through the notion of perfect predictability. It is important to realise, though, that this predictability is not foreordination in the religious sense – it is rational predictability arrived at through deduction from a set of rules and observations.¹⁴⁰ This fact will be important below where I argue that LD is a specific type of determinism that bases the deterministic evolution of the system in sufficient causation and exceptionless laws of nature (which goes on to restrict what we can count as causes and good explanations).

¹³⁷ Sie, M. and A. Wouters (2010). "The BCN Challenge to Compatibilist Free Will and Personal Responsibility." Neuroethics 3(2): 121-133. Pg 121

¹³⁸ Snyder, A. A. (1972). "The Paradox of Determinism." American Philosophical Quarterly 9(4): 353-356. Pg 353; Kellenberger, J. (1975). "The Causes of Determinism." Philosophy 50(194): 445-454. Pg 445

¹³⁹ Hunt, G. M. K. (1987). "Determinism, Predictability and Chaos." Analysis 47(3): 129-133. Pg 132

¹⁴⁰ O'Connor, D. J. (1957). "Determinism and Predictability." The British Journal for the Philosophy of Science 7(28): 310-315. Pg 311

How does the notion of perfect prediction secure determinism? Basically, if you have stated that the future is predictable from the accurate measurements of the system, plus the perfect set of laws that describe that system, then the future is *determined* by the state of the system, plus those laws that constrain it. Or, to put it another way, if the future can be predicted using the present plus the laws of nature, then the present plus the laws must determine the future. In Laplace's own words ~~we~~ ought then to regard the present state of the universe as the effect of its anterior state".¹⁴¹ The past wholly determines the future, and there is nothing in the present that can occur that was undetermined by the past. There is no indeterminism in the system as there cannot be indeterminism in your predictions. If you can predict absolutely perfectly every event in the universe (from the past to the future), such that ~~nothing~~ would be uncertain",¹⁴² then nothing can happen that cannot be predicted perfectly. And if everything can be predicted perfectly from any point along the timeline of the universe, then that timeline of the universe cannot change. Perfect prediction implies no error whatsoever, and if you cannot be wrong about the future, and only one set of statements can describe it perfectly, then there can only be one way that future can turn out.

Therefore, LD is deterministic because it establishes that there can only be one possible future from a given past by stating that every event in the universe is perfectly predictable from perfect knowledge of the laws of nature (the forces that animate, in Laplace's original version) and perfectly accurate measurements of some state of the system. To put this another way, LD establishes the following equation: perfect laws of nature, plus perfectly accurate measurements of the system, equal perfectly accurate predictions. And such an equation is deterministic.

What type of determinism is LD?

Now that it has been established that LD is indeed deterministic, we must take a closer look at exactly what type of determinism it is. As has already been briefly mentioned above, LD secures determinism through a conjunction of the laws of nature and some set of accurate conditions of the system. By resting the deterministic evolution of the universe on these concepts, LD commits us to sufficient causation (which, we will see, goes on to restrict what we can count as explanations of events). In this way, LD is also naturalistic and knowable.

¹⁴¹ Laplace, P. S., marquis de (1902). A Philosophical essay on probabilities. New York, J Wiley. Pg 4
¹⁴² *Ibid.*

Are all determinisms naturalistic and knowable, and is this feature even important? No to the first question, and yes to the second. Not all determinisms are naturalistic and knowable - some are religious in nature – resting the deterministic evolution of the universe in the hands of a divinity. In this way, control of the system is external – it is the god sitting outside of the universe that constrains how the universe will get from one specific past to one specific future. In such a universe, there is no guarantee that you could predict things perfectly, or that you would be able to have any rational means of accurate foreordination at all. It must be noted that prediction within a system, and prediction outside of the system, are two completely different things.¹⁴³ Just because god has rigged the universe so that only one future is possible, does not mean that we could share knowledge of this future. However, with LD's explicit statements about a vast intelligence being able to 'know the future' given knowledge of the laws of nature and accurate conditions, this makes LD naturalistic (its deterministic character does not rest on a divinity, and is instead due to forces internal to the system) and knowable (insofar as we can find out the laws of nature and measure the system). That LD is naturalistic and knowable is important insofar as we, like that 'vast intelligence', can use knowledge of the laws of nature and accurate conditions to predict future events.

To repeat, LD is a purely naturalistic form of determinism that does not require any form of divinity to ensure the deterministic character of the universe. LD is also knowable in the sense that it is formulated in a way that humans cannot just understand, but actually use. Humans can know the laws of nature, insofar as they are observable regularities (argued for below), and humans can take measurements of a system, and finally, humans can use the laws of nature and appropriate measurements to predict. While it is true we have limitations that do not currently allow us to make perfect predictions (we do not currently have a fully accurate set of the laws of nature, and we cannot currently take perfect measurements) by formulating LD in these terms, there is nothing in principle limiting our ability to attain this knowledge. The limitations we have are practical (technological and computational), they are not inherent limitations of the system. If, as Laplace suggested, there was a being of sufficiently vast intelligence that it really could hold both perfect measurements and perfectly accurate laws to analysis, then it really could make perfect predictions.

¹⁴³ Rummens, S. and S. Cuypers, E. (2010). "Determinism and the Paradox of Predictability." *Erkenntnis* 72(2): 233-249. Pg 223

Therefore, LD is naturalistic and knowable in the sense that it does not require a god or any other force external to the universe to ensure its deterministic character. What makes LD deterministic is within the universe, and is knowable in the sense that it is attainable by analysis.

Now that this has been established, it seems important to take a further look at exactly how LD formulates this naturalistic, knowable determinism. That is, if LD is formulated in terms of the laws of nature being used to perfectly predict the future and deduce the past – then what are the laws of nature? And how is it that the laws of nature can secure determinism, ensuring the one-to-one evolution of states within a system? As we shall see, this is due to the sufficient nature of causation that LD is committed to.

Laws

It is important to appreciate that the laws of nature are not a necessary inclusion into a thesis of determinism.¹⁴⁴ There can be deterministic theses where the single evolution of one future from one unique past is constrained by an all-powerful entity such as god, as above.

However, it does seem like the laws of nature, or something like them, are necessary in a purely naturalistic thesis of determinism. Regardless, the laws of nature explicitly appear in the definition of LD – where it is their role to constrain the evolution of the system from its boundary initial conditions. They are the formula into which Laplace's being of vast intelligence plugs his perfectly accurate measurements of reality in order to predict any future time.

What are the laws of nature? Is there only one definition of this concept, or, like determinism, can there be different conditions attached to it? According to van Inwagen, for any proposition to be a true law of nature it must be a general statement with the following characteristics –(i) A law must be true (ii) A law must be contingent (iii) A law must not entail the existence of any particular individuals”.¹⁴⁵ But of all these conditions, in my own opinion, it is the first that is the most important – a law must be a true statement. But not just any true statement, it must be a true statement about the *entire* universe across time and space. To put this another way, for a law to be truly inclusive of the whole set ‘of nature’ it must be absolutely exceptionless within that set. That is, there must not exist anywhere any

¹⁴⁴ Harding, G. (1997). "Free Will and Determinism: Why Compatibilism is False." *Erkenntnis* 47(3): 311-349. Pg 313

¹⁴⁵ van Inwagen, P. (1979). "Laws and Counterfactuals." *Noûs* 13(4): 439-453. Pg 440

exception to the law (another way to view this is that a law cannot be broken – you cannot believe that a law of nature is a real law, and then go ahead and make some device that breaks it).¹⁴⁶ As Pereboom and Kornblith put it, —the very idea of a statement which is both a causal law and admits of exceptions is self contradictory”.¹⁴⁷

It is this condition of being exceptionless statements that is crucial to the main argument of this thesis. Because this requirement seems to commit LD to a certain type of causation, a type of causation which in turn, as I will argue for in Chapter Six, commits us to a certain type of explanation. The type of causation I believe LD commits us to is sufficient causation. Basing the deterministic evolution of the system on exceptionless, true laws of nature prevents us from accepting probabilistic causation, requiring instead the one-to-one connection of sufficiency.

I will now briefly describe what a cause is, what sufficient causation is, and why LD commits us to sufficient causation.

Causation

What is causation, and what is its relationship to LD?

Defining causation is a complex task (like every other definition in this debate!). There are many different views of causation, from the common Humean view to that of process theory.¹⁴⁸ Within the freewill debate specifically, there seems to be no consensus upon which view to take, with some authors defining the relationship of cause to effect as that of a generalisation of observed phenomenon,¹⁴⁹ while others take —the causal relation to be among the basic constituents of the universe”.¹⁵⁰

But what is causation, and why is it so important for the freewill debate? According to Ferré, —causal influences are ubiquitous in human life”.¹⁵¹ Causation, in fact, seems to be the inference by which we associate events that are always accompanied by other specific events

¹⁴⁶ *Ibid.* Pg446

¹⁴⁷ Pereboom, D. and H. Kornblith (1991). "The Metaphysics of Irreducibility." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition **63**(2): 125-145. Pg 133

¹⁴⁸ Strawson, G. (1987). "Realism and Causation." The Philosophical Review **37**(148): 253-277. Pg 253-254

¹⁴⁹ *Ibid.* Pg 254

¹⁵⁰ Clarke, R. (1993). "Toward A Credible Agent-Causal Account of Free Will." Noûs **27**(2): 191-203. Pg 197

¹⁵¹ Ferré, F. (1973). "Self-Determinism." American Philosophical Quarterly **10**(3): 165-176. Pg 168

in a set period of time.¹⁵² Or to put this in another way, cause and effect relationships seem to help us make sense of events over a period of time. According to Montefiore, when we talk of causation – in this language the suspicion that everything may have a cause is a suspicion that everything may be levered into position and not merely preceded by something else”.¹⁵³ While this view of causes as levers is not necessary to understanding causation in terms of my argument, it is the view of causes as regular and predictable that enables much of the power of determinism and LD. If it were the case that events merely occurred, that the phenomenology of experience was simply that of one state being replaced with another – we would have no means to derive regularity from these experiences. But if, on the other hand, when certain causes occur and certain events follow – and if we can find out and represent these causes – then we can explain and predict what effects they will produce. That is, we can understand a causal world, whereas perhaps only experience a world without predictable regularity. And in terms of LD, because we can represent such causes, we can predict them.

While causation’s link to understanding and prediction is very important for the rest of this thesis, so too is its links to sufficiency. For LD, as I will shortly argue, is committed to viewing causes as sufficient for their effects. Though it is worth noting that many authors think sufficient causation is, in fact, necessary for all types of determinism,¹⁵⁴ with Taylor and Dennett noting, “Determinism is essentially a doctrine concerned with sufficiency”.¹⁵⁵

What is sufficient causation? A cause is sufficient for its effect such that whenever it occurs its effect must follow. That is, “whenever the cause C occurs, then the effect E follows”.¹⁵⁶ Such a statement, like the laws of nature under LD, describes an exceptionless relation. That is, it will never be the case that C, and not E. The statement that whenever C occurs, E occurs, must be universal – there must not exist one example or possibility of C not leading to E – otherwise C simply would not be a sufficient condition of E.

¹⁵² Crissman, P. (1942). "Freedom in Determinism." *The Journal of Philosophy* 39(19): 520-527. Pg 522
¹⁵³ Montefiore, A. (1957-1958). "Determinism and Causal Order." *Proceedings of the Aristotelian Society* 58: 125-142. Pg 127
¹⁵⁴ Duus-Otterström, G. (2008). "Betting Against Hard Determinism." *Res Publica* 14(3): 219-235. Pg 228
¹⁵⁵ Taylor, C, & Dennett, D. (2002). "Who's Afraid of Determinism? Rethinking Causes and Possibilities." *The Oxford Handbook of Free will*. R. Kane. New York, Oxford University Press: Pg 271
¹⁵⁶ Moyal, J. E. (1949). "Causality, Determinism and Probability." *Philosophy* 24(91): 310-317. Pg 310

To define causes as ‘sufficient conditions’ of their effects seems to be popular among determinists,¹⁵⁷ making it not simply isolated to LD. But are sufficient causes deterministic, and why does LD supposedly require them?

A sufficient causal relationship is deterministic in the sense that it is exceptionless. As above, it is not the case that once the cause arises some other effect can eventuate. Cause A must and will lead to effect B. Such a relationship is deterministic in the sense that nothing else can occur. If, for instance, you were to multiply this singular causal relationship to that of every causal relationship in the universe, then the universe would be unavoidably deterministic. If nothing can happen in the universe that is not caused, and all causation is sufficient, and sufficient causation is deterministic – then the universe would be deterministic. As soon as the initial conditions of the universe occurred, then there would only ever be one way that universe could evolve. Sufficient causation, in this way, ensures determinism through being exceptionless.

Why is LD committed to this view of causation? Because it is committed to an exceptionless, true view of the laws of nature. If the laws of nature constrain the evolution of one state to the next, and if these laws are exceptionless, true statements, then these laws require some exceptionless way to operate. If causation explains how one state leads to another (or ‘evolves’ in the terminology I have been using to describe the action of the laws of nature), then LD requires causation to be exceptionless, and exceptionless causation is sufficient causation.

Therefore, sufficient causation is deterministic, and LD requires sufficient causation. Because LD rests the deterministic evolution of states in both sufficient causation and the laws of nature, LD is naturalistic and, in principle, knowable.

Summary

This chapter has tried to establish three things: that LD is deterministic; that LD is a natural, knowable kind of determinism; and that LD ensures determinism through an adherence to exceptionless laws of nature and sufficient causation. In an LD universe, then, nothing can happen that is not described by the laws of nature, nothing can happen that is not described by sufficient causation, and nothing can happen that is not in-principle perfectly predictable.

¹⁵⁷ Hesslow, G. (1981). "Causality and Determinism." *Philosophy of Science* 48(4): 591-605. Pg 592
Jordan, J. N. (1969). "Determinism's Dilemma." *The Review of Metaphysics* 23(1): 48-66. Pg 49

In the next chapter, I will take a look at the kind of explanation that LD might require. As it was established in Chapter Three that reasons-based freedom, in order to confer responsibility, requires that we be able to explain why we did some action by reference to our reasons – in chapter Five I will take a closer look at what these types of explanation might entail.

Chapter Five – Explanations

What is an explanation? What counts as an explanation? On what grounds is an explanation different from a description? What features must a statement contain in order for it to be regarded as explanatory?

Within this chapter, I intend to undertake a brief analysis of explanation. I also intend to try to answer what type of explanation LD might commit us to. I will do this by looking at the three most popular theories of explanation, assessing whether they may be appropriate for LD, before finally establishing the elements you might need for a successful explanation under LD.

Explanations

You can explain different things in different ways, and different types of statements can act as explanations in different types of contexts. What then is an explanation? Woodward has noted that the term “~~e~~xplanation” can be appropriately applied in a number of various formats: from explaining meanings of words, to explaining our actions, to explaining how to complete a task, to explaining the very nature of explanation itself.¹⁵⁸

How then are we to limit our concept of explanation in order to make this analysis clearer? Most contemporary philosophical study regarding explanations has tended to focus on theories of scientific explanation. This is not necessarily to the detriment of ‘ordinary explanation’ though, as again, Woodward has noted: “the tendency in much of the recent philosophical literature has been to assume that there is a substantial continuity between the sorts of explanations found in science and at least some forms of explanation found in more ordinary non-scientific contexts”.¹⁵⁹ He also adds, “It is further assumed that it is the task of a theory of explanation to capture what is common to both scientific and at least some more ordinary forms of explanation”.¹⁶⁰

¹⁵⁸ Woodward, J, "Scientific Explanation", *The Stanford Encyclopedia of Philosophy (Spring 2010 Edition)*, Edward N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/spr2010/entries/scientific-explanation/>>.

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.*

It, therefore, seems appropriate to restrict this analysis to scientific theories of explanation. Another rationale for this restriction, perhaps, is the decidedly scientific nature of LD itself. The substance of LD, as discussed in the chapter above, talks of laws of nature, sufficient causation, and perfect prediction. It is decidedly empirical and scientific in its formulation, and as such, surely requires scientific explanation. Though this is more of an observation than a point I will argue for, it still seems appropriate to note that the very formulation of LD makes scientific explanation, *prima facie*, the appropriate target of analysis.

What are the most popular theories of scientific explanation? Roughly, the Deductive-Nomological Model, the Causal Mechanical Model, and the Unificationist Model. While there are other statistical models of explanation, such as the Statistical Relevance Model – there seems to be some good reason to believe that these simply are not relevant to LD. As LD is thoroughly deterministic, it surely treats probabilities as factors of ignorance. If someone knew all there was to know about the universe, as in Laplace’s definition, then they would not have any need for probabilities. Therefore, any notion of explanation that takes probabilities to be some brute fact about the universe would not be allowed under LD, as a probabilistic explanation would simply be one where you were demonstrably ignorant about the real causes at play.

I will now go on to give a very rough overview of each of these models of explanation, concentrating particularly on what each counts as an explanation. Before I do, though, I wish to make one point. All of these forms of scientific explanation are unified by their purpose of providing “explanations of why things happen, where the ‘things’ in question can be either particular events or something more general—e.g., regularities or repeatable patterns in nature”.¹⁶¹ This point is not only important in that it restricts what these theories of explanations must achieve, but also it will become very important when I argue later in this chapter that LD must cite the laws of nature and causation if it is to explain why anything has happened at all.

The Deductive-Nomological Model

There are two parts to the DN Model – both the deductive and nomological side. According to Woodward, an explanation of this character should —~~be~~ the form of a sound deductive

¹⁶¹ *Ibid.*

argument in which the explanandum follows as a conclusion from the premises in the explanans”, thus making it *deductive* (the explanandum and explanans being separate elements within an explanation).¹⁶² The Nomological half of this model comes from the requirement that the explanation must cite, or refer to, some law of nature in order to preserve the logical validity of the deduction.¹⁶³ Broadly then, the explanation becomes a specific, local instance of some true law of nature.

How does this concept of explanation relate to LD? Under LD, the laws of nature are exceptionless, complete, and necessarily perfectly describe every event that will ever happen. Such laws of nature, if one were to know them, could definitely provide one with the means to explain events in the deductive way outlined above. In fact, out of all of the three theories of explanation I will discuss, it is my belief that the DN Model is the most appropriate fit for LD. Why? Because if it really is the goal of an explanation to explain why something happened (or will happen) then this seems to commit LD to referencing the laws of nature. It is the laws of nature, after all, that are responsible for restricting the deterministic evolution of the universe – and surely, it is by referencing these that we explain why at some point in time and space something happened. It is also by citing such laws that we know our explanations would be true. As the DN Model requires deductions from laws of nature, and as we already know that the LD laws of nature must be exceptionless and true, then it is by referencing these that we make our explanations true as well.

Therefore, the DN Model seems to fit well with LD, but what of the other two models of explanation?

The Causal Mechanical Model

The Causal Mechanical Model explains phenomenon by reference to their apparent cause. For instance, if you wish to explain why the window broke, reference to the fact a rock was thrown through it would be a type of causal explanation. Simply explaining that the window broke because it, in fact, broke would not be a satisfying causal explanation. Causal Mechanical explanations, however, do place constraints on what you are allowed to view as causal, thus further constraining what counts as an explanation.

¹⁶² *Ibid.*

¹⁶³ *Ibid.*

One way to understand the mark of a cause under this model, is that it is something that is a physical process that can “transmit a mark in a continuous way”, that results “in a local modification of the structure of a process”.¹⁶⁴ An example to illustrate this, as above, is the thrown rock resulting, upon impact, in cracks appearing in a window. A critical distinction between a cause and a non-cause is this ability to transmit a process – making a rock hitting the window the cause of the cracks, but not the colour of the rock the cause of the same effect.

The above, however, is only one way to understand what can count as a cause in this type of explanation. What is crucial to understanding Causal Mechanical explanation is simply the fact that explanations must cite causes.

How does this model of explanation fit with LD? As discussed in the previous chapter, LD is committed to sufficient causation, as derived from its exceptionless laws of nature – so the concept of causation, as such, is not one that LD is inconsistent with. In fact, as Laplace himself said: “We ought then to regard the present state of the universe as the effect of its anterior state and as the cause of the one which is to follow”.¹⁶⁵ Built into Laplace’s very definition is not just causation, but also the apparent need to “regard” processes as occurring *because* of causation. Thus, the requirement of the Causal Mechanical Model that explanations must cite causes seems entirely consistent with LD.

As the Causal Mechanical Model is silent on precisely what constitutes a cause, the LD requirement of sufficiency can easily be substituted in. Then, for an explanation to be successful in the Causal Mechanical sense under LD all that is required is that the explanation cites a cause. To put this another way, under this model and under LD all explanations would have to cite sufficient causes.

This model, therefore, seems consistent with LD. As was discussed above, the concept of causation is integral to LD, thus requiring explanations to cite a cause seems entirely appropriate.

The Unificationist Model

¹⁶⁴

Ibid.

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Laplace, P. S., marquis de (1902). A Philosophical essay on probabilities. New York, J Wiley. Pg 4

—The basic idea of the unificationist account is that scientific explanation is a matter of providing a unified account of a range of different phenomena”.¹⁶⁶

What is meant by unification in this sense? According to Woodward, a paradigmatic example is Maxwell’s unification of electricity and magnetism, which successfully demonstrates the explanatory unification of two phenomenon previously thought to be unrelated.¹⁶⁷ It is thus the process of taking two apparently unrelated phenomenon, finding out some overall process that links them, and referring to this process in your explanation. The more unifying the explanation, the *better* the explanation.

What relation does this form of explanation have to LD? It would depend on what principle the unification rested. Under LD, as we already theoretically have our full set of the laws of nature and our full predictions for all time – how exactly would one explanation be more ‘unifying’ than another? Surely, it is the laws of nature themselves that are the unifying principles under LD as it is these that successfully constrain and describe the evolution of every single event in the universe. Unification then, perhaps, is a *fait accompli* for LD. As long as LD has the full set of successful laws of nature then it has already unified all matter, all events, under one perfect theory. The Unification Model, then, seems to offer little more than the DN Model – requiring successful explanations to reference the laws of nature.

Therefore, on the above analysis, it seems that, of the three currently popular views of explanation, both the DN Model and the Causal Mechanical model are the most appropriate for explaining phenomenon under LD. It is by its requirement that an explanation must reference the laws of nature that the DN Model insures its deductive validity. And as LD allows for perfectly accurate and perfectly exceptionless laws of nature, any DN explanation under LD would be deductively valid. And as LD is formulated in terms of causation, requiring that all explanations cite causes is entirely consistent. This requirement of explanations to both reference the laws of nature and causation can easily be married.

The exceptionless laws of nature at work under LD require sufficient causation to preserve their exceptionless character. And indeed, Laplace himself referred to us regarding one present state of the universe as causing the next. Causation then, is equally important to

¹⁶⁶ Woodward, J, "Scientific Explanation", *The Stanford Encyclopedia of Philosophy (Spring 2010 Edition)*, Edward N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/spr2010/entries/scientific-explanation/>>.

¹⁶⁷ *Ibid.*

explanation under LD. If we are then to explain why something has happened, which is the goal of scientific explanation,¹⁶⁸ under LD we must cite a cause, and this cause must be in reference to a true law of nature.

Now that much of the groundwork of this thesis is complete, I will finally go on in the next chapter to argue that reasons-based freedom is incompatible with LD, as reasons cannot count as explanations because they cannot count as sufficient causes and there can be no laws of nature that operate on the level of reasons.

¹⁶⁸

Ibid.

Chapter Six – the Argument

In this chapter, I intend finally to draw together my argument that reasons-based freedom is incompatible with Laplacian Determinism. It is my contention that LD, due to its theoretical requirement of exceptionless laws of nature and sufficient causation, rules out the ability of reasons to be able to account for behaviour – and that this critically undermines reasons-based freedom.

In Chapter Two, I concluded that one of the main reasons we want freedom is that we want responsibility. I also argued for the fact that compatibilists can have this responsibility-conferring freedom if they can give some account of control, such that it is possible to link people to their acts in such a way that can differentiate between coerced, unintentional, and intentional acts.

In Chapter Three, I argued that reasons-based freedom is a popular form of compatibilist freedom that is responsibility-conferring (i.e. links agents to their acts, and can mitigate their responsibility based on coerced, unintentional, and intentional acts). I also argued that, for reasons-based freedom to be able to confer responsibility in this way, it must be able to allow reasons to explain behaviour – giving an acceptable account of why the person acted in the way they did.

In Chapter Four, I argued that LD is a type of determinism because it requires in-principle-perfect prediction. I also argued that it is formulated in terms of perfect knowledge of the laws of nature and perfect measurements of conditions leading to perfect predictions. Because of the way these laws of nature are used, they must be considered exceptionless. LD is also formulated in terms of causation, and because of the requirement of exceptionless laws of nature, we are committed to viewing this causation as sufficient.

In Chapter Five, I argued that though there are many different contemporary theories of explanation, both the DN Model and the Causal Mechanical Model seem to be the best fits for LD. This restricts the type of explanations LD can accept to those that cite the laws of nature and causes. It is through this deductive reference to the laws of nature, via the DN Model, that the validity of an explanation is attained. However, I also noted that, due to the

way in which Laplace originally formulated his statement, explanations must also cite causes, as in the Causal Mechanical Model of explanation.

From the above analysis, I will now make the following claim that I will argue for in this chapter: LD is not compatible with reasons-based freedom because LD cannot allow reasons to explain our behaviour. Reasons cannot be sufficient causes, and even if reasons are compound causes with other conditions, they are still too weak to confer justified moral responsibility. If reasons are not allowed to account for behaviour, then they cannot be used to confer responsibility – meaning that a compatibilist freedom based on reasons, in an LD world, fails to deliver what it needs to.

Reasons aren't sufficient causes

What is a sufficient cause? To recap: in Chapter Five, we learnt that LD commits us to sufficient causation through having true, exceptionless laws of nature. Sufficient causes are causes where, should cause C arise, effect D *must always* arise. The connection between a cause and its effect is exceptionless and true throughout time and space. Every instance of cause C will always lead to effect D.

One note before we begin this analysis, LD commits us to a sufficient view of causation, but it also commits us *only* to this view of causation. It is not the case that in an LD world sufficient causation occurs *and* some other type of causation is possible. Sufficient causation must explain all types of causation in LD, insofar as causation explains the evolution of one state into another. To put this more clearly: if causation is the mechanism by which one state of the universe evolves to the next, then causation must be fully deterministic to ensure determinism. No instance of indeterministic causation can occur in a deterministic universe. This causation must also be fully expressed by the exceptionless laws of nature if we are to use these laws to derive every possible state, future or past. And if we want these laws of nature to be powerful enough to encompass every possible instance of the universe (which is necessary if we want to be able to predict every possible instance of the universe), they must necessarily be able to pertain to *every possible state*. That is, they must be complete. And if they require sufficient causation, then, by extension, sufficient causation pertains to every possible state of the universe. Or everything that can happen happens in a sufficiently causal way. So it cannot be that some other form of causation, perhaps one that allows reasons, can

sit alongside sufficient causation. Under LD, if something happens, it was sufficiently caused.

Now that we have established that LD commits us exclusively to a view of sufficient causation, it is time to argue that sufficient causation rules out reasons. If sufficient causation requires that the same cause, Cause C, will always lead to the same effect, Effect D, then, by extension, Cause C can only lead to one type of effect. Cause C cannot sometimes lead to Effect D *and* sometimes to Effect E. If this were the case, then it simply would not be true that Cause C always leads to Effect D.

Reasons do not have this exceptionless character, and are considered one-to-many phenomenon.¹⁶⁹ What do I mean by this? Basically, the same reason can account for more than one action in different cases. Liking chocolate ice cream can be a good enough reason for eating chocolate ice cream, buying chocolate ice cream, making chocolate ice cream, or investing in a chocolate ice cream company. I can do different things for the same reasons, and the same thing for different reasons. So when one type of reason arises, there is absolutely no guarantee that a certain type of action will result. In other words, Reason A can lead to Effect D or Effect E. To say that Reason A will always lead to Effect D simply is not true. Liking chocolate ice cream will not always lead to buying chocolate ice cream. Reasons when looked at on their own, therefore, cannot be sufficient causes.

Also, reasons can never be sufficient causes because we can have reason to do things we never do, for instance.¹⁷⁰ Having a reason to do something does not mean you'll actually do it. Having a reason to go to Hawaii because you like pineapples is not sufficient to make you go to Hawaii. Once again, this violates the sufficient relationship between the cause and the effect. If Cause C is sufficient for Effect D, then *whenever* Cause C arises, Effect D follows. But if we can have reasons for doing something, but never actually do that thing, then the reason wasn't sufficient for the action.

Therefore, reasons are not sufficient causes. If reasons are not sufficient causes, and LD requires sufficient causation for explanation, then reasons cannot be used to account for our behaviour under LD.

¹⁶⁹ O'Connor, T. (1993). "Indeterminism and Free Agency: Three Recent Views." Philosophy and Phenomenological Research 53(3): 499-526.508-509

¹⁷⁰ Foot, P. (1957). "Free Will as Involving Determinism." The Philosophical Review 66(4): 439-450. Pg 444

There can be no laws of nature at the level of reasons

If LD really is committed to the DN Model of explanation, then LD requires of its explanations that they reference the laws of nature. If they do this correctly, then we can hold such explanations deductively valid and, thus, true. Because there is no in-principle limitation to knowing the laws of nature, it is technically possible to give perfect DN explanations under LD. You would thus explain phenomenon X by citing it in reference to the law of nature that produced the phenomenon.

We know of LD, though, that its laws of nature must be absolutely exceptionless. If there exists an exception to a law of nature, then under LD it simply would not be a law of nature. The question now becomes, can there be exceptionless laws of nature pertaining to reasons? If there can, then surely we could give a satisfactory explanation citing reasons under the DN Model. If there was a law, for instance, stating that every single time an individual was thirsty they tried to get a drink – then if we came across a thirsty person, we could have an explanation of why they suddenly reached for a glass of water.

But it is not just enough that there be a law of nature explaining such behaviour, under LD such a law must be exceptionless. That is, there must be not a single instance of a thirsty person not seeking out a drink.

While some philosophers do think that there can be laws operating at the psychological and social level,¹⁷¹ I do not think such laws could be exceptionless, especially in regards to reasons. This, after all, leads back to the fact that reasons are not sufficient causes. If you had a law of nature stating that if you liked chocolate ice cream, you would buy chocolate ice cream – then every single time the like of chocolate ice cream formed, the effect of buying it would follow. But we already know that liking chocolate ice cream can lead to a number of different actions, and also, no action at all. You can form a reason without ever acting on it, which seems like a crucial blow to the formation of any law of nature at the level of reasons. It simply is not the case that having Reason A would exceptionlessly lead to Action B – which would be required for a proper law of nature, under LD.

¹⁷¹ Ferré, F. (1973). "Self-Determinism." American Philosophical Quarterly 10(3): 165-176. Pg 172

It could be objected, however, that there could be laws of nature operating not solely at the level of reasons, but inclusive of them. For instance, perhaps having Reason A and Conditions A, would be sufficient to cause Effect B. It therefore, would be the case that reasons were sufficient for their actions only when certain conditions arose. For instance, having the reason of liking chocolate ice cream and the conditions of being in a chocolate ice cream shop with just enough money would be sufficient for the action of buying chocolate ice cream.

There are two possible ways to view this statement. The first is that reasons are causes and the conditions themselves are causes, and when they combine, they lead to a single effect. The problem with such an account, however, is that it strips the causes of their sufficient nature. Either reasons are sufficient for their effects or they are not. After all, as Kim notes, it is absurd to consider two separate causal chains leading to the same effect.¹⁷² LD requires all causation to be sufficient, so if we are to consider reasons as causes and the conditions as causes at the same time – then both have to be sufficient. But two sufficient causes cannot lead to the same effect at the same time without introducing overdetermination. Either one was sufficient for the effect or it was not. If both are sufficient for the effect, then each singular cause cannot be considered sufficient in the circumstances.

The second possible reading is that the reason and the condition combine to produce a singular sufficient cause, which then produces the effect. This reading seems to be more probable than the previous, which leads to overdetermination, as under this interpretation reasons are not causes in and of themselves, but become so in relation to the other conditions pertaining at the time. That is, just as striking a match is not sufficient to produce flame in an oxygen-free environment, when the right conditions pertain (one of which would be enough atmospheric oxygen) then the effect of flame results. So too with reasons. Having a reason to buy chocolate ice cream and having an enabling environment together produce the effect of actually buying the ice cream.

While viewing reasons as compound causes, in this way, seems to be intuitively harder to argue against, I would still hold that it forces us to view reasons in a way that critically undermines their ability to convey justifiable moral responsibility. In essence, it weakens

¹⁷² As quoted in: Pereboom, D. and H. Kornblith (1991). "The Metaphysics of Irreducibility." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition 63(2): 125-145. Pg 142

them, watering them down until the control they are meant to convey becomes insufficient to account for the responsibility we want them to hold. To flesh this argument out: In the beginning chapters of this thesis it was argued that, in order for our actions to be justifiable candidates for moral responsibility, we must allow our reasons to account for our behaviour. If we want our rewards and punishments not to be trivial, then we need them to be based on something we have personal control over, which in this case is reasons. However, if reasons are, essentially, compound and non-divisible from their environment, then this condition seems to be violated. It also seems to prevent us from being able to distinguish between intentional, accidental, and coerced acts, as we cannot estimate just how much the environment has affected our actions.

What do I mean by reasons being compound and non-divisible? I mean that, because under LD all causes must be sufficient, then all causes that involve reasons must still be viewed as sufficient wholes (so, Cause A = reasons + conditions). You can't take the 'reasons' bit out of that equation and analyse it on its own and decide just how causal it was under the circumstances. We know from above that reasons are not sufficient causes, so we know that on their own they cannot be causal under LD. We also cannot divide Cause A up and assess just how causal each bit is (i.e. reasons are 60% causal, while the conditions were only 40% causal), because the fact remains that they are only causal together (neither could have been causes on their own). So assessing how 'causal' reasons were under the circumstances seems pointless. But if we can't assess how important reasons were in causing some action, then doesn't that drastically weaken our argument that in order to have justified moral responsibility we need to act for reasons? If we cannot separate reasons out from the environment, then we cannot make a justifiable assessment of how important the environment was. And if we can't do that, then we cannot tell the difference between intentional and coerced actions, leaving moral luck back on the table.

It is my assessment, therefore, that if reasons are to be viewed as causal when combined with certain other conditions, this still precludes the type of responsibility-conferring freedom we are looking for, if, as under LD, we are committed to viewing causation as sufficient.

It seems that this argument hinges on what we are to take reasons to be in the first place. If we view them as causal, as many philosophers think that they must be,¹⁷³ then under LD they

¹⁷³ Mills, E. (2006). "The Sweet Mystery of Compatibilism." *Acta Analytica* 21(4): 50-61. Pg 52

simply cannot be causal, as they cannot be sufficient for their effects. If we are, however, to view them as half-causes that must combine with certain environmental conditions before both, as a whole, can be viewed as sufficient for the effect – then the fact remains that we still lose the responsibility-conferring aspect of reasons that we need to safeguard.

If reasons are to be viewed as causal, then we have established under LD that they simply cannot be causal – and such, could not be used to explain our behaviour. If reasons are to be viewed as partial causes, then we have also established that under LD this weakens them down in such a way that they would not be able to explain our behaviour as strongly as we need to account for moral responsibility (that is, they cannot differentiate between coerced, unintentional, and intentional acts).

Summary

This chapter has sought to establish the main argument of this thesis – that reasons-based freedom and LD are incompatible. It has done this by establishing that reasons cannot count as explanations under LD. And if reasons cannot explain our behaviour, then they cannot be used as an inroad for responsibility-conferring freedom.

Now that the main argument of this thesis has been established, there seems to be one other important question to address. If reasons-based freedom and LD really are incompatible, but both are so popular, do we have grounds to prefer one to the other? Should we resign ourselves to the fact that reasons cannot be used as an inroad to compatibilist responsibility under LD, but that LD is simply too valuable to give up? Or vice versa? Which theory is more valuable to us – reasons-based freedom or LD? Which theory is more useful? Do we have any grounds to believe one theory is more likely, or at least more coherent, than the other is?

I will attempt to answer all these questions in the next chapter when I argue that, if you are a compatibilist at least, you should reject LD in preference of reasons-based freedom. LD, I will argue, is unlikely to be compatible with any type of responsibility-conferring freedom (and responsibility, as has been seen in Chapter Two, is simply too valuable to give up). LD is also, as I will attempt to show, not a particularly coherent theory to start with.

Chapter Seven

In this chapter, I intend to address the following question: if this thesis is right, and reasons-based freedom is incompatible with LD, then do we have grounds to prefer one to the other? Is there something that reasons-based freedom can offer us that LD cannot? Is there some reason to view one theory as more robust, as more likely than the other?

It is my own opinion that LD is 1) unlikely to be compatible with any type of freedom that can confer responsibility, and 2) is an incoherent theory to begin with. I think that there are several theoretical problems that very much draw into question whether the principles LD is based on are even possible.

This chapter will be split up into two sections. In the first section, I'm going to ask whether there might be some other freedom that LD is compatible with, such that it can salvage responsibility worth wanting. I am going to make the argument that LD actually commits us to reductionism, and reductionism seems not to be compatible with linking agents to their acts (which was argued, in Chapter Two, to be an essential condition for responsibility).

In the second section, I will argue that there are several reasons to find the theory of LD flawed. I will argue that one of the main pillars of LD, in-principle-perfect predictability, is an incoherent notion. Due to the problems of error magnification, representation, and computational power no entity within the universe would ever, even in principle, be able to make a perfect prediction.

I will end this chapter with the proposition that LD should be dropped in favour of reasons-based freedom.

Is LD compatible with any type of responsibility-conferring freedom?

The very definition of compatibilism is that it offers a form of freedom possible in a deterministic world. But does that mean for every type of determinism there is a form of compatibilist freedom? Or are some deterministic theories built so tight that no freedom, in a genuine sense of the word, is possible? Is Foot right in thinking, ~~the~~ "the idea that free will can be reconciled with the strictest determinism is now very widely accepted".¹⁷⁴ This argument

¹⁷⁴ Foot, P. (1957). "Free Will as Involving Determinism." The Philosophical Review 66(4): 439-450. Pg 439

very much depends on how we define freedom. In Chapter Two, it was established that one of the reasons we want freedom (a reason shared between compatibilists and libertarians) is that we want responsibility. But it is not just any type of responsibility we want. We want responsibility in such a way that it can enable the actions of reward and punishment to be linked to the value judgements of praiseworthiness and blameworthiness. We want responsibility to justify our reactive attitudes in such a way that it enables us to distinguish between great acts of moral evil and the neutral acts of natural disasters. We want to be able to hold ourselves and others accountable in a way that leads to motivation, gratitude, and forgiveness – and away from the apathy and socially maladaptive behaviours that we associate with a lack of belief in responsibility.¹⁷⁵ In order to attain this ‘responsibility worth wanting’, we need to be able to link agents to their behaviours, and we need to be able to distinguish between coerced, unintentional, and intentional acts. The question now is can LD ever allow this?

It is my position that LD will never be compatible with responsibility worth wanting (and thus freedom worth wanting, by extension) because LD commits us to a reductionism that eliminates the agent as a location of action. This reductionism, in turn, means that a better explanation of why an agent did some act will never actually reference the agent – but some conglomerate of particles at the most basic level of reality. Such explanations do not seem apt to differentiate between coerced, unintentional, and intentional acts because such explanations simply would not be translatable into that kind of language.

In order to argue for this view, I will have to establish the following: that LD leads to reductionism, and that reductionism is incompatible with linking an agent to their acts and differentiating responsibility-mitigating circumstances.

To begin with, why does LD lead to reductionism? The key to this lies in the requirement of true, exceptionless laws of nature. The only laws that could remotely come close to being exceptionless, would have to be laws that pertained to matter at the most basic level of

¹⁷⁵ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." Neuroethics **Online First**(25 February 2010).

reality.¹⁷⁶ In other words, only the talk of physics would allow us the exceptionless terms required by such laws of nature.

Why would exceptionless laws lead to viewing causation as only occurring at the micro level, or the most fundamental level of reality?

LD links the laws of nature to measurements, then to perfect prediction. Now, does this actually commit us to reductionism? Let's review what reductionism is – it's the view that the 'real cause' for some event occurred at some level of organisation below which the apparent effect was identified (though this is only one type of reductionism – I further this discussion below). To illustrate, a reductive account of why I chose to eat a chocolate ice cream would locate the actual cause not in my choice, but say in a certain configuration of impulses throughout my neural net. There are several types of reduction, from epistemic, to methodological, to ontological (the view that causes really do occur on a lower level of organisation).¹⁷⁷ The type of reductionism that seems to be suggested by LD is ontological reductionism, which is the view that all those mental states/attributions of reasons that we might associate with freedom (or, critically, base our responsibility on) do not actually exist.¹⁷⁸

Why does LD commit us to this radical view of reductionism? Because LD commits us to exceptionless laws of nature. To begin with, many philosophers hold that the only events exceptionless laws of nature could explain would be the micro events of physics.¹⁷⁹ If this is right, and the exceptionless laws of nature are those things that constrain and describe the sufficient evolution of one state to the next, then all sufficient evolution must occur at the level of microphysics. To flesh out this argument we have the following propositions: 1) it is a necessary requirement of LD that every single possible event within the universe is predictable, and this predictability requires knowledge of the laws of nature, 2) the laws of nature describe only the stuff of microphysics, 3) the laws of nature constrain the evolution of

¹⁷⁶ Pereboom, D. and H. Kornblith (1991). "The Metaphysics of Irreducibility." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition 63(2): 125-145. Pg 133

¹⁷⁷ Brigandt, I & Love, A. "Reductionism in Biology", *The Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2008/entries/reduction-biology/>.

¹⁷⁸ Ramsey, W. "Eliminative Materialism", *The Stanford Encyclopedia of Philosophy (Spring 2011 Edition)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2011/entries/materialism-eliminative/>.

¹⁷⁹ Pereboom, D. and H. Kornblith (1991). "The Metaphysics of Irreducibility." Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition 63(2): 125-145. Pg 131

states, ensuring determinism, 4) the laws of nature (in LD) require sufficient causation, 5) you cannot have two sufficient causes leading to the same effect, as this leads to the absurd notion of overdetermination, , 6) thus, every possible event must be describable by the laws of nature, 7) if the laws of nature can only cover microphysical events, these events must be sufficient, and if these events are sufficient, then it does not make sense to view causation as occurring on any level other than that of microphysics.

Now, if LD really is committed to this radical form of reductionism, can it be compatible with any type of responsibility-conferring freedom? My answer is no. If we require, to be responsible, a genuine connection between agents and acts, then ontological reductionism rejects this. The entire concept of the person seems to disappear under radical reductionism,¹⁸⁰ replacing all talk of my actions and me with talk of particles, velocities, and such. I can no longer be the location of my choices, for this I must be flattened out and replaced with an equation the stuff of which physics describes. Can such an account tell us when an agent has acted in a coerced, accidental, or intentional manner? Unlikely, for how would the terms coerced, accidental, and intentional be translated into talk of particles and their motions? How many electrons zipping to the left makes an action coerced? What is more is that the distinction between where a human ends and its environment begins becomes completely intermixed if you are committed to viewing everything at the level of the most fundamental building blocks of reality - making distinctions at higher levels of organisation arbitrary.

It, therefore, does seem that radical reductionism would make responsibility impossible. I have kept the most important point until last. If we are committed to radical reductionism, and responsibility really does require an account of why the agent did something, then LD cannot allow responsibility, because under LD the agent can never actually *do* anything. The only causation that occurs, in LD, occurs at the level of the microphysical. We have already shown above that this means we are committed to causal accounts as explanations. Therefore, the only explanations, under LD, must cite the microphysical. Therefore, it is not the case that an agent can do something and then be held responsible for it – because the agent can never do anything. Only microphysics does anything. And if the agent cannot act, the agent cannot be held accountable for actions, and the basis for responsibility is

¹⁸⁰ Montefiore, A. (1957-1958). "Determinism and Causal Order." Proceedings of the Aristotelian Society 58: 125-142. Pg 130

eliminated. Therefore, radical reductionism is incompatible with responsibility. If LD requires radical reductionism, then it seems unlikely there are any forms of responsibility-conferring freedom that LD is compatible with.

The argument above hinges on one critical point – that LD really does require this type of mind-eliminating radical reductionism. If there can be exceptionless laws of nature for events above the microphysical, then the above argument does not stand. I am not actually going to argue for this point any further, though, because to run into this argument would take too much space. Instead, I am going to end this section with a provisional answer. On the balance of analysis, it *seems* as though LD is unlikely to be compatible with any responsibility-conferring freedom – but I am not going to rule this possibility out. The analysis of responsibility, freedom, reductionism, and so forth seems to be far too complicated to flesh out properly here. Instead, I am going to move on to an analysis of LD – to see whether it is even a coherent theory to begin with. For if LD doesn't actually make any sense, the question of whether it requires radical reductionism that is incompatible with responsibility is a moot point.

Is LD an intelligible theory?

In order for LD to be considered as a rival for reasons-based freedom, it is integral that LD be considered a worthwhile theory to begin with. If LD, on the other hand, cannot be considered a very good, or likely, theory of determinism, then we seem to have grounds to reject LD in favour of reasons-based freedom.

Do we have grounds to believe LD is unintelligible? In this section, I will argue that one of the major conditions of LD – in-principle-perfect predictability – is simply not possible. If LD, then, has built into it a condition that is impossible, is this not grounds for finding the theory lacking?

To rehash, in-principle-perfect predictability is the notion that Laplace's entity with vast intelligence could successfully predict every single event in the universe (past through to present) if it had the full set of the laws of nature and boundary conditions. It is integral to note that, under the way in which Laplace himself first envisioned this, this type of prediction is *within the system*. This vast intelligence is not god; it is not something that sits outside of the universe making and recording observations. It is an intelligence *within* this universe, an

entity for which the future and past can be laid before its eyes if only it has the requisite formula. Why is it important to note this? Because by being within the system you are trying to predict perfectly you face unsolvable problems that render the whole concept incomprehensible – problems that I will discuss below.

In order to show that in-principle-perfect predictability is not possible I must first briefly discuss what prediction is, then I will list all of the problems that render perfect prediction an impossible notion for entities within the system they are trying to predict. I will conclude that, vast intelligence or not, no entity within an LD universe could ever predict anything perfectly – let alone hold the future and past with no uncertainty before their eyes. Thus, if LD really does require this internal, perfect prediction, then this renders LD incoherent.

Prediction and perfect prediction

What is prediction? Dear calls prediction ~~an~~ "empiricised foreordination",¹⁸¹ while Lyons calls it a valid inference ~~on~~ "deductive or inductive grounds".¹⁸² True predictions – or the type of predictions specified under LD – are not lucky guesses,¹⁸³ but are arrived at through a ~~legitimate~~ "process of reasoning".¹⁸⁴

The next question becomes how do we predict in LD. As has been stated several times before, to predict under LD we plug some set of accurate conditions into a full set of the laws of nature and this should give us the perfect predictions Laplace has promised us. Now, if the vast intelligence Laplace talks of is within the universe when it makes predictions based on knowledge of laws and accurate measurements – then, definitionally, according to LD it is possible to make perfect predictions from within the universe. That is, if it is possible for some entity to make perfect predictions, then it is possible for something within the universe to know and represent true, exceptionless laws of nature. It is also possible to make absolutely accurate measurements. And finally, it is possible to compute all this data – not just for a limited time frame – *but to encompass the entire time-span of the universe*. This view commits us to the following: that something like a law of nature, that must be truly exceptionless, can still be represented. It also commits us to the view that measurements of

¹⁸¹ Dear, G. F. (1961). "Determinism in Classical Physics." The British Journal for the Philosophy of Science **11**(44): 289-304. Pg 291

¹⁸² Canfield, J. (1961). "Determinism, Free Will and the Ace Predictor." Mind **70**(279): 412-416. Pg 413

¹⁸³ *Ibid.* Pg 412

¹⁸⁴ O'Connor, D. J. (1957). "Determinism and Predictability." The British Journal for the Philosophy of Science **7**(28): 310-315. Pg 311

some system can be taken absolutely accurately with no ambiguity whatsoever. And finally, it commits us to the view that you could submit all this data to analysis, computing predictions forward or backwards in time with absolutely no threshold for inaccuracy.

I will now argue that the above three claims are incoherent. It is not the case that we can, even in principle, perfectly represent the laws of nature; it is not the case that we can, even in principle, perfectly measure some system; and it is not the case that we could ever, even in principle, have the computational power to encompass the whole timeline of the universe.

Problem of Representation

Perhaps the biggest problem of in-principle-perfect predictability is the problem of representation. There are two main problems here: how we choose to represent our predictions, and how we choose to represent our formulations of the laws of nature and our measurements of the system.

How we choose to represent our predictions is a tricky one. As O'Connor has pointed out, for our predictions to be truly perfect they must be so specific that only one occurrence could satisfy the prediction.¹⁸⁵ That is, a prediction of the kind 'tomorrow you will win money' can be realised in many different ways (you may win a bet, you may win the lottery, etc.). A truly deterministic perfect prediction would be represented in such a way that only *one* event could satisfy it. Why? Because LD requires unique evolution.¹⁸⁶ Unique in the sense that given one set of the laws of nature and one past, there can only be one future. In other words, the same laws of nature and a different past should not lead to the same future. So when you are making a prediction in LD, your predictions should be strong enough so that they should reference and represent the laws of nature and conditions in such a way as to preserve this uniqueness.

Is it possible to represent something in such a way that it can only pick out one possible universal occurrence? To do so seems to require perfect accuracy, as well as a language capable of specifying such accuracy. I will argue below that perfect accuracy is impossible, but for now, I will turn my attention to the limits of our language. What does the type of

¹⁸⁵ O'Connor, D. J. (1957). "Determinism and Predictability." The British Journal for the Philosophy of Science 7(28): 310-315. Pg 313

¹⁸⁶ Bishop, R. (2002). Chaos, Indeterminism, and Free Will. The Oxford Handbook of Free will. R. Kane. New York, Oxford University Press: Pg 112

deterministic accuracy, described above, require of representation? We have already ascertained that it must be able to pick out one, and only one, possible state, and represent that in such a way that one, and only one, possible occurrence can satisfy it. Doesn't this seem to entail that there can only be one possible, optimally efficient way of representing that state? (I refer to optimal efficiency here because even though there are an infinity of ways to represent something, because we are going to need to do perfectly accurate calculations based on those observations, this restrains how we represent them. In other words, our language is going to have to be specific and accurate enough to be able to differentiate between even the smallest differences in observable data – which seems to rule out anything we currently have at our disposal. Also, our language must match how our laws of nature are represented in order to preserve computability). In the real world, according to Earman, there seem to be an ~~unc~~countable infinity of representations" available to us.¹⁸⁷ We can represent the same occurrence in so many different ways *within* the same language, and many, many more between other languages. We have a multiplicity of languages to choose from and a multiplicity of possible representations within those languages on top of that. Are any of these languages currently available to us capable of the task of representing unique deterministic states perfectly? According to Bendall we seem to require ~~a~~ metalanguage more general than that of any specific empirical theory or branch of science and richer than that of mathematics".¹⁸⁸ We currently do not have this kind of language, and it is unknown if we ever will. Perhaps it seems inevitable, then, that we cannot (perhaps currently, perhaps ever) make our statements and representations determinate enough to be able to identify ~~w~~without ambiguity one and only one event whose occurrence would satisfy the prediction".¹⁸⁹

But are there restrictions on us *ever* being able to represent states in such a deterministic way? And isn't my conclusion a little premature, unless I can argue for why there might be fundamental restrictions on the perfect type of representation required by LD? It is my own belief that perfect representation will never be possible without leading to a paradox. To make a perfect prediction in a LD-type universe, every prediction would have to be of the

¹⁸⁷ Earman, J. (2009). "Essential self-adjointness: implications for determinism and the classical-quantum correspondence." Synthese **169**(1): 27-50. Pg 45

¹⁸⁸ Bendall, K. (1971). "Laplacian Determinism and Omnitemporal Determinateness." The Journal of Philosophy **68**(21): 751-761. Pg 757

¹⁸⁹ O'Connor, D. J. (1957). "Determinism and Predictability." The British Journal for the Philosophy of Science **7**(28): 310-315. Pg 313

entire universe, requiring you to accurately represent every single occurrence (from the macro to the micro), and such representation would simply be too much information to represent (almost requiring you to have another universe in which to keep your representations!). And if this is the case, then, even in principle, perfect prediction is incoherent, rendering LD incoherent too.

I will now argue for this belief. Why would perfect representation never be possible? Because of the following:

1) What would a perfect representation of a state look like? 2) It would have to be able to differentiate between the absolute smallest difference in possible states – right down to the tiniest imaginable change. 3) It would have to be able to differentiate this ‘smallest possible difference’ on the universal scale – that is, out of the whole universe it would have to be able to specify the location (velocity, etc.) of the tiniest possible particle. 4) For the prediction to be truly perfect, deterministic, and unique you would have to specify the location (velocity etc) of *every single* particle in the universe. 5) Why? Because for a prediction to be ‘perfect’, it must pick out only one possible state, and that state must be the *universal* state. Predicting that you will specifically win money by winning the lottery is not enough. This prediction is not perfect enough. Winning money by winning the lottery could still lead to uncountable different futures, it is just not specific enough. Your prediction must be only able to lead to one specific future, and thus must only pick out one specific future. You, therefore, must specify this *entire* specific future for your prediction to be truly deterministic, unique, and perfect. Identifying that you will win money by winning the lottery on Tuesday at 10am is not enough – the best prediction (and thus, the most perfect) will predict the entire state of the universe, right down to the tiniest possible difference. If a prediction does not reference the entire state of the universe, you will not be able to tell whether it was perfect. You could win the lottery on Tuesday at 10am in two different universes, each of which are identical, save for one single atom that is out of place. A perfect prediction must tell you which one of these possible universes you are in, and therefore must refer to *everything*. The concept ‘perfect prediction’, really has to be taken as *perfect*. Perfect prediction must have no possibility of being wrong (otherwise, there would be a more perfect prediction) and therefore must have a probability of one.

Therefore, in order for a prediction to be truly perfect, it must reference the entire state of the universe, specifying each possible state of each possible entity within that universe, from the smallest atom to the biggest star.

Now, such a prediction would require *a lot* of information. And by ‘a lot’ I mean an inconceivable amount. For every single atom, for every single star – you must be able to represent their exact position, velocity (and any other relevant information). *For every single* tiniest part of the universe, you need to have an account of where it is and what it is doing. For however many particles (or whatever is smaller) are out there, in the *entire* universe, you need to describe them all in such a way as to have no ambiguity. You have to describe every single detail of every single thing such that you could differentiate between universes with only the tiniest possible difference. This just does not seem possible. As Montague notes ~~there~~ “there are uncountably many states of the world but only countably many sentences”.¹⁹⁰ Where could you possibly keep all of this information anyway? How many sentences or strings of numbers would you need to describe perfectly one atom, let alone a whole universe of them? And how big would your final prediction be? It seems to me that in order to truly know whether your prediction was perfect, you would essentially have to represent an exact replica of the universe to check against the real thing. And how are you to build a universe of information within a universe already full of information? Indeed this problem, as we shall see, leads to a further critical problem for perfect prediction – the problem of computation. For now, however, it seems enough to conclude that perfect representation, as required by LD, is simply not, even in principle, possible.

The problem of computation

Above we saw that in order for a perfect prediction to be perfect it would have to be able to differentiate between two universes that were the same save for the smallest possible difference. We also saw that we, therefore, would have to represent every single possible piece of information relevant to every single possible particle, and so forth. We would need, essentially, a prediction rich with as much information as the entire universe if we were to be able to differentiate between almost identical universes. But while that makes a clear problem for representation, doesn’t that flow on to the problem of computation? Laplace said that all you needed to have no ‘uncertainty’, and to have the entire future and past laid before your

¹⁹⁰ Leeds, S. (1995). "Holes and Determinism: Another Look." *Philosophy of Science* 62(3): 425-437. Pg 431

eyes, was a being of enough intelligence to hold what equates to the laws of nature and boundary conditions of the system within its mind all at once.¹⁹¹ Now, what is crucial here is that Laplace has not put a time limit on his predictions. This formula for perfect prediction is good for the entire time span of the entire universe. There is no upper threshold to predictions – you can make perfectly accurate predictions for a minute from now, a year, a million years, all the way forward to the end of time (and likewise into the past). Such a thing, as I am now about to argue, just is not, even in principle, possible.

To return to this concept of ‘perfect prediction’, you must be able to differentiate between almost identical universes in order to satisfy the deterministic, unique evolution of LD. Now, a single LD universe must have a singularly unique history.

1) A perfect prediction of one million years from now must be absolutely perfect – it must specify only one possible universe, and differentiate between almost identical ones. But what does that mean? Does that mean you compare the state, one million years from now, with your prediction of one million years from now? Yes, it does mean this, but it means something more. For your prediction to be truly able to satisfy unique determinism you must not just show that your prediction matches the future, but that everything leading up to that matches as well (otherwise you will not be able to differentiate between a universe where the one-million-years-from-now prediction is the same, but preceding that there was some tiny difference – a difference which separates the two universes). To state again, the unique history requirement of LD means that there can be only one possible future from a given past. You must, therefore, be able to show that the future you arrive at is the only result of a given past. The only way you can do this, in order to be able to differentiate between almost identical LD universes, is to *reference* that entire past. So it is not enough to check your prediction of one million years from now against the reality of one million years from now – you have to show that your prediction matched the exact evolution of the real universe. How would you do this? You would have to predict every state in between. And once again, your predictions would have to be absolutely perfect and reference absolutely every possible location (and other relevant information) of every possible thing. And you would have to do this for *every* possible instance of time between now and your million-year prediction, *if* you are to establish that the prediction is absolutely perfect. However, perhaps this is not even

¹⁹¹ Laplace, P. S., marquis de (1902). A Philosophical essay on probabilities. New York, J Wiley. Pg 4

enough. For, to truly establish that your prediction was perfect, and that your universe was deterministic and unique – you would have to back track your predictions in time, showing that only a given past leads up to that one prediction a million years from now. And now we've backtracked to the beginning of time, we're going to have to fast-track to the *end* of time – making a prediction for every possible thing in space, for every possible time of the universe.

As a short aside, one could counter this argument by suggesting that LD does not commit us to viewing determinism as being temporally symmetric (i.e., given one state at some time, both the future *and* past are fixed; as opposed to being temporally asymmetric, where only the future is fixed, given some state of the universe at some time). Some authors view LD as being temporally symmetric,¹⁹² and my argument above hinges on that. When Laplace says of his being of vast intelligence that *for it, nothing would be uncertain and the future, as the past, would be present to its eyes*,¹⁹³ I do believe he is indicating temporal symmetry. For LD, you can retrodict from the current events to the past, just as you can predict from those same events what the future will be. In other words, once you have your laws of nature and you have fully accurate measurements of any temporal point within the system – you can use those to predict in any temporal direction.

But, going back to my original argument, doesn't it seem a little extreme? Surely, we wouldn't have to make our prediction for all time and space just to perfectly predict some event one million years from now? Surely that is just insane, all we need to see if our prediction is accurate is to measure it against what actually occurs, not against the entire history of the universe, past and present.

This counter argument does not stand if you are to truly satisfy the requirements of *perfect* prediction. Why? Because for a prediction to be perfect, as I have argued above, you have to state how it occurred and *only* it occurred. You have to make a statement so specific that only one possible instance of the universe could satisfy it. Otherwise, you would have to accept that a more perfect prediction would be possible (i.e. one that could differentiate between the smallest difference). It is the unique evolution requirement of LD that is the decisive factor. One specific past for one specific future; one exact event. Now, with our prediction of

¹⁹² O'Connor, D. J. (1957). "Determinism and Predictability." The British Journal for the Philosophy of Science 7(28): 310-315. Pg 312

¹⁹³ Laplace, P. S., marquis de (1902). A Philosophical essay on probabilities. New York, J Wiley. Pg 4

winning money – to predict this perfectly, you have to show that only a given past lead up to the event, and only one possible future lead away from it. Otherwise, the prediction would not have a probability of 1, and you would not be able to differentiate between almost identical universes. Therefore, in order to make a truly perfect prediction under LD, it seems you would have to make every prediction one about all time and space. Just to phrase this in a different way, as this point is key to my argument, it is this insistence on ‘perfect’ prediction that renders this concept incoherent. It requires the most perfect representation, the most perfect accuracy, and the most perfect completeness. Which is more perfect, a prediction that specifies one event at one time, or a prediction that specifies completely which universe you are in? I would argue that it is the former. But that, of course, leaves it up to the reader to conclude whether LD really requires this much perfection.

We are finally up to the problem of computation. If you have to make an absolutely perfect prediction about all time and space, such that you can differentiate between predictions that are almost right, but not quite – then this would require an impossible amount of computation. Not only do you have to describe every possible state, but now you have to compute that information into a prediction. Now, by what method are you going to hold and compute this information? Laplace only required an entity of vast intelligence, but that is not going to cut it. Your computer, or computational device, will have to hold enough information and be able to crunch enough equations to be able to run an *exact* model of the universe. How large would such a computer be, how would it hold all this information, and where would it draw its power?

To expand on this point, how could you ever run a perfectly accurate model of a universe within the same universe? In order for the model of the universe to be perfectly accurate it would have to contain the exact same number of variables as was in the real universe (that is, it would have to contain at least as much information as the universe). The problem occurs when you realise that the model, once operational, becomes a variable within the universe as well. And thus, the model now has to contain not just information about the whole universe, but information about itself too. The model has to contain a model of itself. In other words, it must run within its model of the universe another model of the universe. Running an embedded simulation of the entire universe within a model of the entire universe – which is supposed to occur within the universe – has just multiplied the amount of data and computational power required unimaginably, leading to an infinite regress. Put another way,

the perfect prediction desired seems to require that the model have at least as much information as the universe as a whole. The question remains, does this also require us to believe that our model of the universe has *more* information than is within the universe (which is very obviously an incoherent notion)? If the model has to model not just the universe, but also a model of the model – then maybe it does.

I feel confident in concluding that such a computer and such models simply could not exist, and would have to be on the scale of our universe, or larger, in order to undertake the task desired. Therefore, the perfect prediction required under LD would not be possible, due to the problem of computation.

The problem of accuracy

The problem of computation and the problem of representation (as above) would lead to a third problem – the problem of accuracy. Being able to make predictions for all space, with no upper limit on time, means we would need to be able to measure everything perfectly. Any error whatsoever in our measurements would result with error in our predictions. And as soon as we started to push these predictions further into the future (or retroactively into the past) we would come up against the problem of error magnification. ~~Mathematical singularities and paradoxes multiply rapidly~~,¹⁹⁴ when our predictions are pushed to the far reaches of time and space, or as Bishop puts it quite nicely: ~~We cannot produce reliable predictions for all times, however, because even linear growth in initial errors eventually will exceed the accuracy bounds~~.¹⁹⁵ Our measurements, then, would have to be perfect in every way if they were to lead to perfect predictions. But could we ever measure anything perfectly, and what would such a concept entail? Assuming Heisenberg's uncertainty could be overcome,¹⁹⁶ and we could know all the information we would need to about every single particle – how do you measure every single particle in the universe at once? This limitation of perfect predictions, as above, requires perfect representation of those predictions. It requires us to know when our predictions are out by even the smallest, tiniest little particle. In order to make the predictions we need to know everything it is possible to know about every single part of the universe (from particles to stars). Now, how do we measure all of that at once?

¹⁹⁴ Dear, G. F. (1961). "Determinism in Classical Physics." The British Journal for the Philosophy of Science **11**(44): 289-304. Pg 293

¹⁹⁵ Bishop, R. C. (2003). "On Separating Predictability and Determinism." Erkenntnis **58**(2): 169-188. Pg 175

¹⁹⁶ Hodgson, D. (2002). Quantum Physics, Consciousness, and Free Will. The Oxford Handbook of Free will. R. Kane. New York, Oxford University Press: Pg 89

How do we get all of this information in the first place, and how do we measure it again, a second time around, when it comes to checking our prediction off against the reality? We would have to know, and measure, the entire universe in a single instant in order to satisfy the accuracy bounds of our prediction. How do you measure the whole universe at once? What kind of entity would we have to be (or entities) to be able to be everywhere in a single instant, measuring and collating every single bit of information possible? Not human, that's for sure. In fact, the kind of omnipotence and omniscience thus described seems to require something akin to a god. But as LD is definitely a naturalistic determinism, gods are very much ruled out of the equation. But unless you could be everywhere at once, and know everything at once – then the accuracy required for perfect prediction could never be satisfied. Therefore, the accuracy required for perfect predictions under LD is not even in principle possible (unless for a god).

The problems discussed above seem to render perfect predictability an impossible concept even in principle. It is simply not the case that anything within an LD universe would be able to represent, compute, and measure what is necessary in order to make perfect predictions. As Laplace's original formulation (and the modern formulation that are based on it) are definitionally linked to this ability of perfect prediction, we must accept that rendering perfect prediction incoherent is a heavy blow against LD.

In the first half of this chapter I argued that it is unlikely that LD would be compatible with any type of freedom that can confer responsibility worth wanting (though I did not conclude that it was impossible). As we have seen in this section, there is a critical problem with LD, in the form of perfect predictability. We must now ask the question of whether these two facts are enough to render LD a less likely (or attractive) theory than reasons-based freedom.

As a libertarian, I am inclined to suggest we ditch both theories, but that is not what I have argued for here. It was the aim of this thesis to draw attention to the fact that the compatibilist reasons-based freedom is incompatible with LD. Once that had been achieved, I aimed to show problems with LD, such that it would seem unlikely that any freedom worth bothering with would be compatible with it, and such that LD itself seemed like an unlikely possibility in the first place. My ultimate aim behind this is to show one thing: some deterministic theories are just built too tight to allow even compatibilist freedom. It is not the case that compatibilism is the theory that for every theory of determinism there is a type of freedom

worth wanting. We must qualify this. If we are to believe in compatibilism at all, we need to be realistic about the type of determinism we attach it to. If we are too loose with our theories of freedom, then our theories about reality will suffer; likewise, if we are too tight with our theories of reality, then our theories of freedom will be restricted. We, therefore, must keep an eye on balance if we are to construct workable theories of freewill. After all, the freewill debate, for me, is about reaching a balance about what we think we can do, juxtaposed with what we think is possible.

Conclusion

Summary of this thesis

I am going to keep this summary brief as I have tried to end each chapter with a summary of its conclusions. I intend here simply to bring them together.

This thesis set out to argue that reasons-based freedom is incompatible with Laplacian Determinism. Reasons-based freedom is a type of compatibilist freedom, and compatibilism is the theory that you can have freedom ‘worth wanting’ in a deterministic universe. If Laplacian Determinism is a type of determinism, shouldn’t it be compatible with the compatibilist reasons-based freedom? My answer was no.

In order to establish this argument I split the analysis up into six chapters (not including the introduction and this conclusion). In Chapter Two, I established that freedom is something we want because responsibility is something we want. Responsibility justifies our reactive attitudes, and lacking a belief in responsibility can lead to apathy and maladaptive behaviours.¹⁹⁷ It is, therefore, freedom’s link to responsibility that makes it valuable (among other things). Within this chapter, I also established that for a compatibilist to enable a responsibility-conferring freedom they do not require the ability to choose between alternative possibilities of action. To establish this I ran through Frankfurt-Style arguments.

In Chapter Three, I established that reasons-based freedom was a type of compatibilist freedom (not requiring AP) that could confer responsibility. It could only do this, however, if our reasons were allowed to explain our behaviour. I

In Chapter Four, I analysed and defined Laplacian Determinism. LD is a theory of determinism that enables perfect prediction by linking the laws of nature to accurate measurements of the system. Under LD - to ensure deterministic, unique evolution - the laws of nature must be true and exceptionless. This requirement means that causation under LD must also be sufficient.

¹⁹⁷ Baumeister, R. F., A. W. Crescioni, et al. (2010). "Free Will as Advanced Action Control for Human Social Life and Culture." Neuroethics **Online First**(25 February 2010).

In Chapter Five, I looked at explanation. It was found that the Deductive-Nomological and Causal Mechanical Models of explanation are the best fits for LD. This means that explanations under LD require reference to sufficient causation and exceptionless laws of nature.

In Chapter Six, I brought together the main points of this thesis into an argument that LD was not compatible with reasons-based freedom because LD could not allow reasons to explain behaviour. Reasons, I showed, are not sufficient causes, as they are one-to-many phenomenon. I also argued that there can be no laws of nature at the level of reasons, precisely because reasons are not sufficiently causal. From this analysis, I concluded that reasons-based freedom was not compatible with LD, and could not be used to bring responsibility into a LD universe.

In Chapter Seven, I looked at the consequences of this incompatibility, arguing that if reasons-based freedom and LD clash, we have grounds to prefer reasons-based freedom. I made this conclusion by arguing that it is unlikely LD could ever be compatible with any type of responsibility-conferring freedom and that LD's requirement of internal perfect predictability is incoherent.

On the above summary, I can now restate my conclusion: reasons-based freedom is not compatible with LD, and we should prefer reasons-based freedom to LD.

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